



Calhoun: The NPS Institutional Archive
DSpace Repository

Theses and Dissertations

1. Thesis and Dissertation Collection, all items

1966-11

International law and exploitation of the resources of the high seas

McMahon, Bernard F.

American University

<http://hdl.handle.net/10945/9542>

Downloaded from NPS Archive: Calhoun



Calhoun is the Naval Postgraduate School's public access digital repository for research materials and institutional publications created by the NPS community. Calhoun is named for Professor of Mathematics Guy K. Calhoun, NPS's first appointed -- and published -- scholarly author.

Dudley Knox Library / Naval Postgraduate School
411 Dyer Road / 1 University Circle
Monterey, California USA 93943

<http://www.nps.edu/library>

NPS ARCHIVE
1966
MCMAHON, B.

LITERARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIF. 94060

INTERNATIONAL LAW AND EXPLOITATION
OF THE RESOURCES OF THE HIGH SEAS

by

Bernard F. McMahon, jr.

Submitted to the
Faculty of the School of International Service
of The American University
in Partial Fulfillment of
the Requirements for the Degree
of
MASTER OF ARTS

LIBRARY
NAVAL POSTGRADUATE SCHOOL
MONTEREY, CALIF. 93940

Copyright by
Bernard F. McMahon, jr.
1966

ABSTRACT

Between the territorial waters of coastal states there is a vast area referred to as the high seas. These high seas which comprise over 70 per cent of the surface of the earth contain an untold wealth of resources. Traditionally these seas are free, that is, under the sovereignty of no one, available for the use of all. The advance of technology, however, has challenged the rationale for such unfettered exploitation and added a third dimension of application to the surface and waters, namely the ocean floor. This paper examines the nature of the challenge, and the implications of this new dimension in order to see the present trends and requirements in the development of the international law of the sea.

TABLE OF CONTENTS

CHAPTER

PAGE

PART I

THE REGIME FOR EXPLOITATION OF SEA RESOURCES - PAST DEVELOPMENT

AND PRESENT STATUS 1

I. ORIGIN AND EVOLUTION 1

Freedom of the Seas 1

Beginnings of Transition 1

Modern Law and the Challenge of the Future 8

II. THE LAW AND THE RESOURCES OF THE SEA WATER 13

Internal Waters and Territorial Sea 13

Animal Resources 16

The "Fishing" Zone 23

Vegetable Resources 33

Mineral Resources 34

III. THE LAW AND THE RESOURCES OF THE CONTINENTAL SHELF . 35

Mineral Resources 35

Animal and Vegetable Resources 39

Boundary and Control 42

PART II

THE REGIME FOR EXPLOITATION OF SEA RESOURCES - THE PROBLEM OF

THE DEEP SEA BOTTOM 46

IV. DEEP SEA POTENTIAL 48

Resources 48

CHAPTER	PAGE
Access	55
Recovery	57
V. INTERPRETATION OF THE LAW APPLICABLE TO THE DEEP SEA	
BOTTOM	61
Restrictive School	62
Expansive School	66
VI. SUGGESTED SOLUTIONS FOR THE PROBLEM OF THE DEEP SEA	
BOTTOM	76
United Nations Control	76
Unilateral Acquisition	80
"Wait and See"	82
VII. A PROPOSAL FOR THE DEVELOPMENT OF THE LAW	85
Legal Needs of the Exploitive Industry	85
Legal Needs of Other Sea Bed Users	88
Freedom of the Sea as a Source of Legal Precedent.	90
Continental Shelf Doctrine as a Source of Legal Precedent	94
The Common Good	100
PART III	
THE REGIME FOR EXPLOITATION OF SEA RESOURCES - MEETING THE CHALLENGE	104
VIII. POLITICAL OBSTACLES IN THE DEVELOPMENT OF THE LAW ..	105
Negotiations at Geneva	106
Political Reality of Future Conventions	116
IX. A PROGRAM FOR PROGRESS	118
Public Law 454	118

CHAPTER	PAGE
The Program	120
Conclusion	127
BIBLIOGRAPHY	129
APPENDIX	138
APPENDIX A. Letter from Assistant Secretary for Congressional Relations	139
APPENDIX B. Memorandum from Associate Solicitor Division of Public Lands	140
APPENDIX C. Figures I - V	146

PART I

THE REGIME FOR EXPLOITATION OF THE SEA RESOURCES -
PAST DEVELOPMENTS AND PRESENT STATUS

CHAPTER I

ORIGIN AND EVOLUTION

Freedom of the Seas

A background for discussion can begin with the historical development of the doctrine of freedom of the seas, and the nature of the recent technological accomplishments. In early practice, a little more than five centuries ago, nations generally contended that the sea was not free to the navigation and use of mankind and could be appropriated. Great sections of the sea were subject to almost total appropriation, while vague and exorbitant claims were made over other portions of the sea. Gradually the larger claims were abandoned: those who made them found that the increase of seaborne communications and the growth of maritime commerce made it impractical to retain great areas of the ocean exclusively for their own flags. The very nature of the sea restricted states' claims to only those which they could positively control with shore based cannon.¹

¹John C. Columbus, International Law of the Sea. 5th ed., pp. 55-56.

The legal expression of these realities can be found in Hugo Grotius' Mare Liberum, written in 1609. This treatise, written in order to uphold the rights of the Dutch to navigation and commerce with the Indies, despite Portuguese claims to monopoly, explains why, under 17th Century conditions, the sea ought to be free.

All property is grounded upon occupation which requires that movables shall be seized and immovable things shall be enclosed; whatever therefore can not be so seized or enclosed is incapable of being made a subject of property. The vagrant waters of the ocean are thus necessarily free. The right of occupation, again rests upon the fact that most things become exhausted by promiscuous use, and that appropriation consequently is the condition of their utility to human beings. But this is not the case with the sea; it can be exhausted neither by navigation nor by fishing, that is to say, in neither of the two ways in which it can be used.²

This appeared to be a reasonable and just principle for at that time the resources of the sea were known only to be an inexhaustible supply of marine life - fish, clams, crabs, and by-products such as coral and pearls. The common good of nations would have been impaired by any closure of the sea. Nevertheless, Grotius' ideas were contested by the Spanish and Portuguese, the most eminent of whom was de Freitas. This "Mare Clausum" school found British support in John Selden, who defended British claims to sovereignty over the seas adjacent to her territory for the purpose of maintaining fishing rights in "British" seas. These positions were compromised somewhat by acceptance in the international

²Hugo Grotius, The Freedom of the Seas, p. 22.

sphere of the territorial sea concept. The principle of the freedom of the high seas was soon well established and with the continuing support of the Royal Navy and growing support of the American Navy became axiomatic by the 19th Century.³

The codification movements of the present century on the whole have been most successful with this particular regime. The Institute of International Law at Lusanne in 1927, agreed on a Declaration which clearly summarizes the modern legal position.

The principle of the freedom of the seas implies specifically the following consequences: 1) freedom of navigation on the high seas, subject to the exclusive control, in the absence of a convention to the contrary, of the state whose flag is carried by the vessel; 2) freedom of fisheries on the high seas subject to the same control; 3) freedom to lay submarine cables on the high seas; 4) freedom of aerial circulation over the high seas.⁴

This is essentially the same terminology used in the Geneva Convention on the High Seas which grew out of the 1958 Geneva Convention on the Law of the Sea, ratified by thirty-four nations as of January 1, 1966. This convention was the least controversial and consequently was the first of the four conventions to enter into force, the twenty-second nation having ratified it on September 30, 1962.

³The many cases which reflect the acceptance of this principle in the judgment are exemplified in the "Le Louis" Case and the Marianna Flora decision. Herbert W. Briggs, The Law of Nations, p. 328.

⁴Columbus, op. cit., p. 59.

Beginnings of Transition

The principle of freedom of the seas has apparently progressed with near-perfect success from need, to theory, to practice, to codification, to multilateral acceptance, to multilateral application and, therefore, to fulfillment of the need and solution of the problem. If the subject matter, the sea, had remained unchanged this would indeed be true. However, as early as the turn of the 19th Century certain cracks began to appear in the foundation on which the principle of free exploitability was built. The Bering Sea Fur Seal Arbitration of 1889, and the North Atlantic Coast Fisheries Arbitration of 1910, were settled on the principle of the freedom of the seas.⁵ But the very fact that they arose as disputes indicated that, in fact, the resources of the sea were not unlimited and advantage could accrue to a state by exercising sovereignty over them. Demand for the fish and seals coupled with improved fishing and hunting methods began to destroy the myth of limitlessness. States saw this fact and the dangers of over exploitation and in an effort to control it entered into a number of multilateral self-restraining treaties in the years that followed. An examination of these treaties will show that the concern arose from fear of over exploitation, not from a desire to exclude others for personal commercial advantage.

The preservation of the halibut fisheries in the North

⁵Briggs, op. cit., p. 328.

Pacific Ocean was first provided for in the convention concluded at Washington on March 2, 1923, between Canada and the United States. Regulating catches by the "closed season" method, the convention also established an International Fisheries Joint Commission with scientific and advisory powers. This original convention has been periodically updated and revised. The most recent treaty became effective in 1954. Although its benefit is questionable, this agreement represents an outstanding effort for the regulation of fisheries and the advancement of scientific research under bilateral agreements.⁶

On a wider scale we can see the continuing multilateral regulation of exploitation of whales, first begun by the convention concluded at Geneva on September 24, 1931. It has been ratified by twenty-six states.⁷ Subsequent revisions and protocols to this convention have increased the numbers of species of whales protected, required licensing and reports of catches, established sanctuaries and set limits, and provided for an international administrative organization and methods for settling disputes.⁸

With similar intentions but less success, the North Sea nations have attempted, since the British-French Treaty

⁶Columbus, op. cit., p. 359.

⁷Ibid., p. 362.

⁸Henry Rieff, The United States and the Treaty Law of the Seas. pp. 177-182.

in 1839, to impose necessary regulations. The most recent is the "European Fisheries Convention" in 1963-64, at London which, it is hoped, may increase the regulation of catches and settle the question of conflicting fishing zones within the seas immediately adjacent to the Northern European countries.⁹

The second technological development which has altered the conditions under which the free seas doctrine was conceived is the ability to exploit the mineral and non-living resources of the sea. The law, under the freedom of the seas principle, did recognize certain special areas of the sea bed where a limited resource was found belonging exclusively to one state from "time immemorial." The classic example is the Ceylonese Pearl Beds which extend eighteen miles beyond territorial waters. Vattel's support for the exclusive ownership of these beds was "codified" by Sir Cecil Hurst who enunciated the conditions under which such claims could be considered valid. First, the coastal state must have exercised effective occupation of, and jurisdiction over, the sedentary fisheries on the sea bed for a long period. Second, there must be no interference with the fish in the waters above the sea bed. Third, there must be no interference with the freedom of navigation in the waters above the bed.¹⁰

⁹The outstanding work on the history and problems in this area is Lewis M. Alexander's Offshore Geography of Northwestern Europe-Political and Economic Problems of Delimitation and Control.

¹⁰Cecil Hurst, "Continental Shelf," Grotius Transactions, Vol. XXIV, 1949, pp. 153-169.

Exploitation of the subsoil of the ocean floor was similarly recognized as a right as long as the same rule of non-interference was observed. The British Cornwall Submarine Mines Act of 1858, stated that:

all mines and minerals lying below the low water mark under the open sea adjacent to, but not being part of the country of Cornwall, are vested in Her Majesty the Queen as part of the soil and territorial possessions of the Crown.¹¹

The Coal Act, passed in Great Britain in 1938, asserted similar claims. The negotiations and discussions concerning a channel tunnel between England and France also were considered as a private issue between the two states.

Mineral exploitation did not receive the early attention or concern afforded the living resources. There was no great demand since there was an ample supply from deposits ashore and the technological means of exploitation did not exist. It was the impact of these two factors - technological advancement and commercial demand - which resulted in the significant transition of the law, the Truman Proclamation on the Continental Shelf, in 1947. The Proclamation paved the way for the 1958 Convention of the Continental Shelf which entered into force June 10, 1964. This convention gave the ratifying states sovereign rights to the resources of their continental shelves regardless of whether they had exploited or occupied them for a long period, and allowed reasonable interference to free navigation while exploiting their re-

¹¹Columbus, op. cit., p. 62.

sources, thereby subverting freedom of the seas to the sovereign rights to exploitation.¹²

Modern Law and the Challenge of the Future

The pressures on the original free sea concept are increasing in intensity. Demand for marine resources is being met by quantum jumps in technology. There is an urgent necessity for the law to meet the challenge of these realities.

The resources of the sea are not unlimited - fur seals have practically disappeared, tuna and sardines no longer exist in commercial quantities on the West Coast, and shrimp fishing on the South Eastern seaboard is suffering its fourth straight year of famine.¹³ There is considerable evidence which points to the conclusion that this diminution is a result of over-fishing and not natural phenomena.¹⁴ Figures I and II illustrate the fundamental laws of the dynamics of fisheries population and show that a point of diminishing returns exists. When that point is passed, the stock can be reduced to or near extinction. The rising demand for fish can hardly be questioned. Fish meal, with its 80 per cent protein content, is hope not only for the millions of starving but also for the affluent of today who live under the threat

¹²Rieff, op. cit., p. 332.

¹³Remarks of Dr. W.M. Chapman, Director Division of Resources, Van Camp Sea Food Company, given before the Marine Technology Society, June 27, 1966.

¹⁴E.S. Russell, The Overfishing Problem.

of cannibalism by the year 2000.¹⁵ The cold facts of the population increase bear this out. The human population of earth took approximately ten thousand years to reach a total of one billion persons by the year 1830. This figure was doubled between 1830 and 1930, a mere one hundred years. In the thirty-five years since 1930, we have added still another billion. At this rate there will be six billion persons on earth by the year 2000, and, in six hundred years, there will be only one square yard of living space per person.¹⁶ Major efforts are under way throughout the world to meet the rising demand for fish. One of the prime objectives of the National Science Foundation is the investigation of ocean areas to determine the location and extent of unexploited seafood supplies.¹⁷ Recent success in the Indian Ocean demonstrates the Foundation's effectiveness.¹⁸ The Food and Agricultural Organization of the United Nations provides technical assistance to develop the fishing potential in the poorer countries and finances and publishes research directed toward more

¹⁵Documentation of the great potential of Marine Protein Concentrate, as fish meal is now called, can be obtained from Donald G. Snyder, Director Bureau of Commercial Fisheries Technological Laboratory, University of Maryland.

¹⁶From a statement by Dr. J. Herbert Holloman, Assistant Secretary of Commerce for Science and Technology before the House Subcommittee on Oceanography (Hearings N.O.P.L., p. 259).

¹⁷Statement by Leland J. Haworth, Director National Science Foundation before House Subcommittee on Oceanography (Hearings N.O.P.L., p. 519)

¹⁸Richard Bader, "The International Indian Ocean Expedition, 1967 Oceanology Yearbook, p. 56.

effective utilization of this resource.¹⁹ A look at the Soviet Union will illustrate what can and will be done on a national level. The development in the fishing industry in the U.S.S.R., both as regards number and type of fishing vessels employed and the size of the catch, is truly astonishing. The Soviet catch has increased by more than a million tons since 1948. During this same period the number of fishing boats increased from thirty-six thousand to sixty thousand. The most significant increase took place in powered craft, whose number jumped from 2,727 to 12,387. Of these powered craft the most important increase was of trawlers and factory ships - from 107 to 1,785, while seiners increased from 376 to 1,724.²⁰

With the exception of petroleum, mineral resources of the sea have been largely neglected. This neglect, however, cannot be expected to last for long. Considering only those minerals for which science has been unable to develop synthetics and whose world-wide land deposits are fairly well known, it can be shown that there does not exist enough copper to duplicate in, say, Africa the American communications system, or steel for the transportation, or silver and rare metals to match the existing electronics establishment.²¹ Aware of

¹⁹See Chapter III of F.A.O. Pamphlet no. 3, World Food Problems, "Some Examples of Work and Progress in Fisheries."

²⁰Statement by W.R. Chapman before House Subcommittee on Oceanography (Hearings, p. 411) and Yearbook of Fisheries Statistics, 1964, p. 102.

²¹Remarks of Thomas M. Ware, Chairman International Minerals and Chemical Corp., before Marine Technology Society, June 27, 1966.

this fact, it is hardly necessary to speculate about the future demand for the known mineral deposits which exist in a free state on the ocean floor. According to the National Academy of Sciences, there are large quantities of phosphorite and manganese nodules, the latter of which contain copper, nickel, cobalt, molybdenum, lead, zinc, zirconium, and vanadium. Estimated quantities constitute vastly greater reserves than those on land. Furthermore, the nodules are being continuously formed, by precipitation and chelation of elements from the sea water; for the rarer metals, the rate of formation is much greater than the present world consumption. The nodules thus form a self-renewing mine.²²

Several permits have recently been requested from the Department of the Interior to mine these deposits at moderate depths (50 to 75 fathoms) off the coast of California, and a gigantic vacuum cleaner is being built for this purpose at Newport News Shipbuilding Company in Virginia. Commercial mineral exploitation is not limited to the United States, but is occurring on a world-wide basis. Industry is presently engaged in mining diamonds off the coast of South Africa, tin off Indonesia, iron off Japan, and coal off England. The vast gas and oil field under the North Sea is just now in the early stages of development.²³

²²Sumner T. Pike and Atheistan Spilhaus, Marine Resources, p. 7.

²³Remarks by Dr. Thomas F. Bates, Science Adviser United States Department of Interior before Marine Technology Society, June 27, 1966.

Oceanographic research, consistently the step-child of more glamorous scientific activity, despite its limited budget is making astounding achievements which will profoundly alter man's relationship with the sea. Six years ago Jaques Piccard and Lt. Don Walsh took the "Trieste" down 37,874 feet and rested on the deepest known part of the ocean. Deep submersibles exist today which can easily navigate at 15,000 feet; we are on the verge of a breakthrough in the reduction of the prohibitive cost of these craft by the utilization of structural glass hulls. The United States Navy man-in-the-sea experiments, Sea Lab I and II, mark the beginning of a momentous change.²⁴

What requirements do these changes place on international law and how has that law responded to the challenge? For the answer one must turn to the present status and implications of international law as it pertains to the exploitation of natural resources in the sea. This law has developed along two separate paths; one body of law growing up around the resources in the sea, another pertaining to the resources found on and under the sea bottom. One may look at the law for each category of resource - animal, mineral, and vegetable - found in these areas in order to more readily understand the problem in its entirety.

²⁴Undersea Technology, VII, (January. 1966), p. 25.

CHAPTER II

THE LAW AND THE RESOURCES OF THE SEA WATER

Internal Waters and the Territorial Sea

The seas of the world form one vast interconnected body. Therefore, discussion of the law of one portion of these waters is necessarily related to the waters in all other areas. Before examining the resources of the high seas it is necessary to briefly consider those two artificially delimited legal areas, "internal waters" and "territorial sea," in order to fully comprehend the pressures on and trends of the regime of the high seas.

a) Internal waters. It is well established under international law that each state has full control and authority within the areas of internal waters such as ports and certain bays and gulfs. In practically all instances, the entry of ships into such waters is subject to the consent of the coastal state. All resources in this area are within the complete disposition of the coastal state. Traditionally the areas designated as internal water were limited. However, recent decisions have opened the way to inclusion of rather large expanses of the ocean. It is now generally regarded as permissible to include certain indentations into the coast if the width of the opening does not exceed twenty-four miles in length. If the opening is wider, the coastal state may draw the baseline at the first point where the indentation narrows

to twenty-four miles. The effect of placing the baseline further from the shore is to enlarge the area of internal waters (and, consequently, the right of exclusive exploitation), to extend the limit of the territorial sea and contiguous zones further out from the coast, and to affect the limit of the continental shelf in some situations. Under certain conditions of water-land conformation, the coastal state may employ a straight baseline system using isolated bits of rock and islands off shore as points on the line. The general situation contemplated is described in Article IV (1) of the Convention on the Territorial Sea and Contiguous Zones.

In localities where the coastline is deeply indented and cut into, or if there is a fringe of islands along the coast in its immediate vicinity the method of straight baselines joining appropriate points may be employed in drawing the baseline from which the territorial sea is measured.²⁵

The first application of this system, which preceded its inclusion in the convention, occurred in Norway. When challenged, it was supported by the International Court as conforming with international law.²⁶ As is evident, the use of this system can have considerable impact on foreign fishing activities in near coastal areas.

b) The territorial sea. The scope of state control over the marginal waters accepted as within the territorial

²⁵The Law of the Sea, (London: Society of Comparative Legislation and International Law, 1958), p. 5.

²⁶United Kingdom v Norway (Norwegian Fisheries Case) 46 American Journal of International Law, 195:2, pp. 348-70.

sea is similarly well established. Generally speaking the coastal state has full authority over the fishing and all other resources including those of the sea bed and subsoil of the territorial sea.

However, a critical issue left unresolved at Geneva in 1958, and again at the conference in 1960, was that of the permissible outer limit for the territorial sea. There are two reasons why this question was regarded as important. Both access to fisheries in coastal waters and access by military vessels to important straits are, or might be, affected by the width claimed or accepted for the territorial sea. It is still necessary to be tentative in discussing the existence of a general consensus among states on this issue.

The United States position, the one we claim for ourselves and urge on others, is that three miles is the only limit permitted by international law. At the same time, however, there appears to be a pattern emerging which may indicate general, if tacit, agreement that a six mile territorial sea is permissible. In addition, there are a number of states which claim a twelve mile territorial sea and a very few which claim an even wider limit. The nearly universal opinion is that the latter claims are contrary to international law.²⁷ It is now necessary to turn to a discussion of the specific resources contained within the high seas.

²⁷Majorie M. Whiteman, Digest of International Law, IV, Chapter 4, pp. 14-195.

Animal Resources

Unquestionably the most important resource in the sea is fish, principally pelagic species which have commercial value. As can be easily seen, fish as a resource pose a real dilemma to the international lawyer. They are the most universally valuable resource to be exploited and, consequently, are in the greatest danger of over exploitation. However, the historic rights of free exploitation makes their conservation and distribution a difficult legal problem. It is hard to assess existing rules of international law in regard to the control or regulation of the coastal states of the offshore fisheries, since all attempts at codification have been unsuccessful. The Conference on the Conservation of Resources in Rome in 1955, dramatically brought out the need. However, the International Law Commission (ILC) Draft Code, submitted in 1956, as well as the two Geneva Conferences of 1958, and 1960, failed to achieve the required international consensus.²⁸ As of June 1, 1966, the present Draft Convention on Fishing and Conservation of the Living Resources of the High Seas needs three more ratifiers before it becomes effective. The maritime nations agree on the need for conservation, but are unable to resolve the three opposing views as to method. The first of these is acceptance of the "special interest" of the coastal states, that is, that any international agreement which will conserve a species of fish will

²⁸Garcia R.Y. Amador, Exploitation and Conservation of the Resources of the Sea, p. 197.

give a larger limit to the state whose waters are adjacent to the fishing ground. Some small coastal countries such as Cuba, Brazil, and Venezuela have favored this approach. The second is control through international co-operation. This is the principle of self-restraint between neighbors in an area in which they have historically fished and abstention from that area by nations which have not fished there. The United States and Canada are the backers of this proposal. Finally, there is unilateral regulation and enforcement. A state which has a historic and critical economic interest in the fishing areas adjacent to its territorial sea, can, based on scientific evidence, declare that area necessary for conservation of these resources and enforce what measures are deemed appropriate for its own benefit.²⁹ This is the basis for the Latin American 200 mile "territorial seas." This 200 miles is the limit of the bioma in the Peruvian current off the west coast of South America and within that area fishing laws are unilaterally selected and enforced.

In drafting the convention on fishing, the United Nations Conference hoped to establish a somewhat eclectic position among these opposing views. An examination of the specifics of this most recent expression of the law will point up those controversial areas which bar wider acceptance of the convention. The basic philosophy of the Draft, as

²⁹Shigeru Oda gives an analysis of these conflicting views which is useful despite his prejudice in favor of Japan's professed position. International Control of Sea Resources.

expressed in Article I, is that all nations have the right to fish, but this right is limited by the special "interest and rights of coastal states" and the necessity for "conservation of the living resources of the high seas." These restrictions are for the good of the community as a whole, and only through international co-operation can they be effectively implemented.

The remainder of the convention sets forth the means by which the protection of the state's special interest and the conservation of the fish will be accomplished. These are;

1) Self-regulating domestic laws passed by a particular state restricting its own fishing vessels. (Articles II-III)

2) Multilateral or bilateral self-restraint through treaty or agreement. (Articles IV-V)

3) Adoption and enforcement of unilateral conservation measures in the high seas adjacent to territorial waters, providing that:

- (a) Multilateral negotiations have failed
- (b) There is urgent need
- (c) Measures are based on scientific findings
- (e) The measures do not discriminate in form or fact against foreign fishermen. (Article VII)³⁰

For obvious reasons, Article VII gave rise to the most controversial issues. For some delegations these provisions

³⁰The Law of the Sea, p. 18.

were manifestly contrary to established practice and to fundamental principles of international law, for others, they still did not meet the real needs and legitimate claims of coastal states. On the other hand, some delegations conditioned their acceptance of a coastal state's right to take conservation measures unilaterally on the acceptance of the arbitral obligations provided in the draft, others were reluctant to accept such obligations either because they considered them too rigid and, therefore, incompatible with the special interest and rights of the coastal state or because in their view the task of the conference should be confined to the codification of the substantive law on the subject.³¹

There are additional stumbling blocks to acceptance of the conditions of implementation of Article VII, i.e. the "urgent need" for conservation and the "scientific means" adopted. These can be highly disputed within the scientific community itself when applied to a specific species. In setting forth the scientific foundation for the principle of abstention, Richard van Clive concluded that in any application today, other than post facto, the principle of abstention can be extremely dubious. The stocks concerned must be clearly defined geographically. Sufficient data must be gathered to prove the need for conservation; research and management programs must be in force which meet the most rigid requirements. Evidence must prove that the regulations

³¹Amador, op. cit., p. 197.

will stabilize and restore the stocks. Moreover, the research programs must establish the size of the maximum sustainable yield.³² A far greater scientific capability than presently exists must be developed to meet these objectives. In its report to the Committee on Natural Resources, the National Academy of Sciences listed specifically what scientific effort is necessary in order to make the law effective.

1) Greater attention to broadly based comprehensive studies of marine communities and their interrelationships.

2) Studies of the factors controlling infant survival of oceanic fishes, through experimental studies in shore side laboratories, closely integrated with studies at sea, to provide adequate understanding of this cause of great fluctuations in the fish stocks. Adequate facilities for such experimental studies are non-existent.

3) Technical developments in the field of submersibles and large oceanarium-like laboratory facilities, as well as sea going observational facilities; neither now exists.

4) Systematic ecological mapping of the sea to provide guidance toward the most promising areas for development of new fisheries.

5) Studies of the genetic structure and vital stat-

³²United Nations Conference on the Law of the Sea, Official Records, Vd. I, Preparatory Documents, Geneva, 24 February - 27 April, 1958, p. 60.

istics of populations of commercial marine organisms, to provide a firmer basis of understanding of their population dynamics.

6) Research on the ecology of estuary areas, to provide a basis for ameliorating the effects of pollution, engineering works, and other interventions by man on the important fish populations which inhabit these areas during critical phases of their lives.

7) Research into the possibilities of enriching desert areas of the sea by creating artificial upwellings.

The report concludes that there is vast ignorance of the biology and life history of almost all fishes. With minor exceptions, no one has ever observed the life history of a single salt water pelagic fish from fertilization to maturity.³³

The principal fishing nations who have refused to ratify the convention - Japan and the Soviet Union - conduct extensive scientific research in the oceans and are aware, therefore, of these requirements. Until they can be met, these nations will remain unconvinced of the need to restrict their extensive and lucrative exploitation. The small coastal states of the world realize their inability to prove the need for conservation on a scientific basis, yet fear the fishing techniques which have been destructive in the past. They often prefer exaggerated unilateral exclusion and also oppose

³³Pike and Spilhaus, op. cit., pp. 2, 5-6.

the convention.³⁴

The classic expression of this dilemma may be found in the dispute between the Republic of South Korea and Japan over the Rhee Line. During the years of Japanese occupation of Korea, the fishing grounds of the Yellow Sea were so badly depleted by the Japanese beam trawlers that the fishing in the areas was economically unproductive due to the destruction of bottom feeding grounds and sea grasses. During the war period and the period of occupation, Nature rectified this destructive overfishing and productivity was largely restored. Korean hand-fishing did not impair the stock; however it was feared that with the re-introduction of Japanese fishermen history would repeat itself. It was for this reason that President Rhee established a line in international waters based arbitrarily on the pre-peace treaty MacArthur Line and the Korean War Sea Defense Zone. The Japanese vigorously objected insisting on their right to freedom of the seas. Many clashes subsequently occurred with Japanese fishermen being captured and tried in Korean courts. Three hundred ships and over 3000 men were thus detained, of which 171 ships and twenty-seven men remain in Korean custody.³⁵ Since the collapse of the Rhee regime in the spring of 1960, the

³⁴The following countries had ratified the Convention on Fishing and Conservation of the Living Resources of the High Seas as of November, 1965: Australia, Cambodia, Columbia, Dominican Republic, Finland, Hati, Jamaica, Madagascar, Malaya, Nigeria, Portugal, Senegal, Sierra Leone, South Africa, Uganda, United Kingdom, Upper Volta, United States, and Venezuela.

³⁵Oda, op. cit., p. 26.

number of incidents has decreased and some degree of accomodation has been achieved under pressure from the United States. Unfortunately this mutual accomodation, such as it is, has not been achieved in many such disputes. The rapport between the Soviet Union and Japan over fishing rights in the North Pacific area seems to be evaporating.³⁶ The underlying causes of the 1960-62, "Fish War" in the North Atlantic and Norwegian Seas remain, as Iceland obstructs all attempts at compromise.³⁷ No progress has been made with the western Latin American states in our attempts to arrive at some understanding regarding the tuna fisheries. Fines and confiscations have cost the tuna industry \$179,000b between January 1, 1966, and June 1, 1966.³⁸

There is then a complete absence of positive law in the realm of fish exploitation, and states' practices have been erratic and contradictory. What trend, if any, has emerged from this chaos to indicate the source of future development of the law?

The Fishing Zone

There is general recognition today, as there has been

³⁶As late as March, 1966, and on numerous previous occasions, Soviet patrol craft have ordered Japanese fishermen to leave from points 18 and more miles from the shore. Statement by Hon. Thomas M. Pelly before the House Subcommittee on Fisheries and Wildlife Conservation (Hearings M.F.L., p. 204).

³⁷D.H.N. Johnson, "European Fishing Limits," British Institute of International and Comparative Law, Spead Pub. no. 6, 1965.

³⁸Statement of August Felando, General Manager American Tuna Boat Association before Subcommittee on Fisheries and Wildlife Conservation (Hearings M.F.L., p. 316).

for many decades, that realistic protection of coastal interests requires the state to extend certain of its regulations, applicable to foreign vessels, beyond the limits of its territory as represented by the boundary of the territorial sea. States have done so for a variety of purposes and they continue to do so today. Presently, the most important motive for establishing zones of limited authority beyond the territorial sea is to acquire exclusive coastal access to fishing resources. This extension of a state's jurisdiction is closely related to the question of determining a limit for the territorial sea. At Geneva in 1958, the most prominent proposals for such a limit were combined with provisions for special fisheries limits beyond the territorial sea. The United States-Canadian proposal at Geneva in 1960, which failed to be adopted by one vote, would have established a six mile territorial sea plus a further six mile fishing zone which, with some qualifications, would have enabled the coastal state to exercise the same rights over the fish resources there as it is permitted to in the territorial sea.³⁹ Although there was general willingness, if not quite the two-thirds approval required for adoption, to accept a contiguous zone for fisheries, this proposition was linked to the proposal for a six mile territorial sea and failed when the latter was not accepted. Hence, the general provision on the contiguous zone adopted at Geneva and incorporated into the

³⁹Whiteman, op.cit., IV, Chapter 12, pp. 1131-1140.

Convention on the Territorial Sea as Article XXIV does not mention fisheries as one of the purposes for which a contiguous zone is permissible.⁴⁰

Recent developments, however, especially in Western Europe, have implemented the United States-Canadian proposal. The expansion of exclusive jurisdiction by means of creating special fisheries limits, in lieu of an extension of the territorial sea or an extreme use of the straight baseline, is becoming so common that it suggests a definite trend toward recognition that such zones are in accordance with international law.⁴¹

The United States became the most recent nation to unilaterally extend her fishing zone to a limit of twelve miles. The Hearings before the House Subcommittee on Fisheries and Wildlife Conservation on the bill which provided for such an extension and on a number of related bills, held May 24, 25, and June 1, 1966, provided a most fascinating commentary on the developmental process of international law.

⁴¹Johnson, *op. cit.* Comments on European Fisheries Convention, 1963-64, at London, and subsequent adoption of the six mile exclusive fishing area and twelve mile restricted area by Belgium, Denmark, France, Ireland, Italy, Portugal, Spain, Sweden, and the United Kingdom. Since 1960, twenty-seven nations have claimed contiguous extended fishing zones. Of these, twenty have extended it outward to twelve miles from the coast, one has extended it to fifteen miles, and only six claim 200 miles. In the same length of time, eight nations have expanded their sovereignty by the use of straight baselines and five have done so by expansion of the territorial sea. Based on the synoptical tables concerning the breadth and juridical status of the territorial and adjacent zones prepared for the 1958, and 1960 Geneva Law of the Sea Conferences (Law of the Sea, pp. 35-42) and information gained from the Department of State, April 1966.

Testimony was heard first on the need for a conservation zone to protect fish and preserve present United States interests immediately off shore. The opinion from almost all scientific witnesses, both governmental and private, was that such a zone was neither necessary nor effective. Mr. Giles, legal council for the Department of Commerce, testified;

It would not appear that enactment of the proposed legislation (twelve mile limit) would result in reduced imports of fish and thereby in helping to improve our balance of payments situation and would not materially benefit the United States commercial fishing industry at this time. On economic grounds, therefore, we do not favor enactment of H.R. 9531.⁴²

Mr. Cain, Assistant Secretary of the Department of the Interior, said;

While the United States does not now assert fishing jurisdiction in this nine mile zone, American fishermen now fish in this zone exclusively. Except for two or three isolated instances foreign fleets have not fished in the zone.⁴³

And, again;

It should be pointed out that the extension of the fisheries jurisdiction of the United States would in most cases be of relatively little value in solving conservation problems.⁴⁴

He went on to say that a significant proportion of the fish stocks which now support United States coastal fisheries move

⁴²(Hearings M.F.L., p. 245).

⁴³Nor, in the writer's view, is it likely that the much feared Soviet fleets have any intention to, since any such activity on their part within twelve miles of our coast would be a denial of their own claim to a twelve mile territorial sea.

⁴⁴Ibid., p. 247.

freely from coastal waters to offshore waters and a conservation scheme which admitted of conservation measures in only a part of the area inhabited by these stocks and left exploitation of these stocks in other waters unregulated, would be a half measure at best, and would amount to vain regulation of American fishermen. As examples of resources, the conservation of which would be benefited little by the extension of United States jurisdiction to twelve miles, he cited the salmon, halibut, and king crab fisheries in waters off the coast of Alaska.

The testimonies of the Congressional representatives from commercial fisheries districts and of persons economically interested in the fishing industry expressed the opposite opinion.⁴⁵ These witnesses almost unanimously emphasized the need for the establishment of a fishing zone. The statements below are but a few of the many expressing this view. Hon. Thomas M. Pelly of Washington testified:

Our fisheries must be protected from foreign exploitation and depletion. Delay in declaring a new United States policy to protect our fisheries, of course, only serves to allow foreign fishing fleets to establish historic fishing rights in water off the coasts of North America ... the Russian trawler fleet that recently was on the West Coast, and I know the same is probably true of the Russian trawler fleet that has been off the New England Coast, are depleting

⁴⁵For example see the testimonies of Hon. Thomas N. Dawning (Virginia), Hon. Lloyd Meeds (Washington), Hon. Morton C.B. Rodger (Maryland), Hon. Paul Rodgers (Florida), Hon. Ferrand J. St. German (Rhode Island) in addition to such witnesses as the president of Fisherman's Co-operative Association, Fishing vessel owners of Seattle, the National Shrimp Congress, New Bedford Harbor Commission, and the Ocean City (Md.) Marlin Club. (Hearings M.F.L.) pp. 239-325.

our stocks of American fish.⁴⁶

Hon. Donald H. Clausen, California, stated:

It is vital that we take the necessary steps now to protect our conservation efforts. Our fishermen can not stop the invaders of these traditional fishing grounds. The responsibility for any such action lies with us.⁴⁷

Frederick L. Phebas of the Fishermen's Marketing Association testified:

We are faced with a foreign nation invading our narrow West Coast continental shelf with larger and more powerful boats pulling gigantic nets of very small mesh size, literally denuding the same areas that we have stabilized by our conservation methods.⁴⁸

Hon. Hastings Kieth, Massachusetts, said:

The Soviet danger is a real one. Their fleet has been off the coast of my district for some years. Our yearly catch is declining while theirs has increased 250 per cent since 1953. The people of my district are very alarmed about the presence of these ships. Conservation is the major argument for increasing United States jurisdiction over fisheries.⁴⁹

And finally, Robert Simon, representing the Governor of Alaska, speaking of the salmon, halibut, and king crab fisheries off his coast said:

The United States must not sit idly by while the important contiguous fishing resources are being harvested at an alarming rate by other nations without regard to conservation needs. The United States must take action to protect and preserve our coastal fisheries.⁵⁰

⁴⁶(Hearings M.F.L., p. 257)

⁴⁷Ibid., p. 262.

⁴⁸Ibid., p. 265.

⁴⁹Ibid., p. 268.

⁵⁰Ibid., p. 284.

It seems rather clear that the political pressure to extend the United States fishing zone had much more influence on Congress than the actual facts in the case. A need existed, but it was a need to calm the fears of worried constituents and to bolster the hopes of a depressed fishing industry rather than any real problem of conservation or allocation.

The Committee then turned to the selection of the best of three alternative methods for extending the fishing zone. The first was use of the straight baseline system to expand our internal waters and, thus, our territorial sea. The second was linked to the continental shelf and extended our fishing zone to the one hundred fathom curve or twelve miles whichever was greater. The last established a contiguous zone for fisheries nine miles beyond the territorial sea. The State and Defense Departments were asked to provide an opinion as to the legality under international law of these proposals and the possibility of detrimental effects on our foreign policy and national security.

Commenting on the first proposal (H.R. 9530) which essentially implements Article IV of the Convention on the Territorial Sea and Contiguous Zone, the Department of State expressed the view that the geographic situation on the coasts of a few of the states of the United States is such that it would warrant the use of straight baselines under the Convention. However, it did not recommend that the United States avail itself of this right since the use of straight baselines by the United States would encourage other countries to

do the same, thus reducing to coastal jurisdiction large areas now regarded as high seas. Efforts to persuade other countries not to use straight baselines would also be adversely affected.⁵¹ The Department of the Navy, for the Department of Defense, concurred on the legality of such action but put additional emphasis on the inadvisability of such a move. They stated:

It is considered that the implementation of the straight baseline concept by the United States would have some adverse effects on United States security interests because of the precedent it would set and the encouragement it would afford for possible similar actions by other countries, and because of the support it would lend to the exaggerated and illegal straight baseline claims which have been made by some states. The United States Air Force has similar concerns with respect to freedom of airspace above the high seas.⁵²

Commenting on the second proposal (H.R. 14961) for a fishing zone to the 100 fathom contour, the Departments of Defense and State again concurred in their opinions. The Department of State rejected the idea on legal grounds stating that it was "opposed to the enactment of the legislation which has no basis in international law, and is contrary to the treaty commitments of the United States."⁵³ The Navy went on to say that the use of the 200 meter contour line to

⁵¹Statement by Raymond T. Yingley, Assistant Legal Adviser for Special Functional Programs Department of State, (Hearings M.F.L., p. 273).

⁵²Statement presented by F.R. Downers, USN, Acting Director Legislation Division Department of the Navy, (Hearings M.F.L., p. 242).

⁵³Statement presented for Douglas MacArthur II, Assistant Secretary for Congressional Relations, Department of State (Hearings M.F.L., p. 252).

define the outer limits of this zone would lead to ambiguity, make regulations pertaining to the zone difficult to enforce, and confuse fishing rights with exploitation of the continental shelf, as is likely if the same boundary is used to define the two zones.⁵⁴

On the last proposal (H.R. 9531, S. 2218) the Navy deferred to the State Department's legal opinion, but expressed no objection from a security viewpoint since it did not see that the twelve mile limit would in any way effect the freedom of navigation or of overflight. The Department of State gave its legal opinion in one concise statement;

Since the 1960 Law of the Sea Conference there has been a trend toward establishment of a twelve mile fisheries rule in international practice. Many states acting individually or in concert with other states have extended or are in the process of extending their fisheries limits to twelve miles. Such actions have no doubt been accelerated by the support for the proposals made at the Geneva Law of the Sea Conferences in 1958, and 1960, of a fisheries zone totalling twelve miles as part of a package designed to achieve international agreement on the territorial sea.⁵⁵

Revising its opinion expressed in April, 1965, that:

the United States does not recognize any unilateral extension of either the territorial sea or zones of exclusive fishing rights. In the matter of fisheries, however, agreements between or among interested sovereign participants are recognized.⁵⁶

The State Department goes on to say that,

In view of the recent developments in international

⁵⁴F.R. Downs, op. cit., p. 250.

⁵⁵Douglas MacArthur, (Hearings M.F.L., p. 250).

⁵⁶"Sovereignty of the Sea," U.S. Department of State Geographical Bulletin, no. 3, April 1965, p. 9.

practice, action by the United States at this time to establish an exclusive fisheries zone extending nine miles beyond the territorial sea would not be contrary to international law. The Department has no objection from the standpoint of international law or foreign policy to the extension of our exclusive fisheries jurisdiction to twelve miles.⁵⁷

This last proposal was reported out of committee and passed by Congress on June 15, 1966. It is clear that the Departments of State and Defense thought that, by gaining the twelve mile limit sought at Geneva, without compromising the three mile territorial sea, they had achieved both of their objectives. However, the law has come under sharp criticism from many quarters. Myers S. McDougal, in a heated debate with Senator Charles Pell at the Law of the Sea Institute, berated the shortsightedness of the Government saying, "the lesser the limit, and I almost mean all the way up to the low tide line, the better for the common interest of all mankind."⁵⁸ Arthur Dean, speaking to the Marine Technology Society, called the law a

grave mistake which could open the way for the most blatant claims to sovereign jurisdiction which could only end with the sovereign distribution of the high seas.⁵⁹

Whatever the objections, they are, at this point, largely academic. The principle danger lies in the assumption

⁵⁷MacArthur, op. cit. Note that no mention is made of Article VII of the Convention on Fishing and Conservation, ratified by the United States, which unequivocally prohibits unilateral extension by this method.

⁵⁸Remarks of Myers S. McDougal at opening session of the Law of the Sea Institute, Kingston, R.I., June 27, 1966.

⁵⁹Excerpt from the speech by Arthur S. Dean, "Effects of U.S. Commitments on Ocean Exploitation," Second General Session of Marine Technology Convention, June 28, 1966.

that this bill has solved our pressing legal need for orderly conservation and allocation of the animal resources in the sea. The twelve mile limit does not accomplish this task, and lawmakers should not rest easily having appeased the vote casting public with this half measure. A strategy still must be developed and pursued to meet the challenge.

Vegetable Resources in the Sea

On the whole, there has been little controversy or concern over the legal status of plant life in the sea, primarily because the use of marine plants is, and will undoubtedly continue to be, confined to the large, attached algae of the littoral zone. The plants of the open sea are microscopic phytoplankton, not susceptible to economic harvesting. Littoral algae are used extensively in the Orient for food, and are used elsewhere for industrial, medicinal, and pharmaceutical products.⁶⁰ The National Science Foundation feels greater harvest could be made, but, to be economically feasible, either more effective harvesting and processing methods or the development of new products of greater value would be required.⁶¹

Where exploitation of these algae, especially kelp, has resulted in conflicts such as between the Chinese Communists and the Japanese Governments or between the United States and Mexican Governments, the disputes have been

⁶⁰ Potential Resources of the Ocean, Van Camp Sea Food Company, January, 1965, p. 17.

⁶¹ Pike and Spilhaus, op. cit., p. 6.

settled by bilateral accomodation. No serious problems exist or are expected in the foreseeable future.

Mineral Resources in the Sea

Sea water contains a large variety of minerals in the form of dissolved salts. Extraction of sea salt by solar radiation is an ancient industry, now highly developed, for production of sodium sulfate, magnesium chloride, magnesium, oxychloride, cements, and bromine. Bromine and magnesium are extracted directly from sea water by chemical and electrolytic procedures.⁶² Except for these products, which involve quite a simple extraction process, there are at present few opportunities for the use of the dissolved minerals. The total quantity of many minerals in sea water is very great, but they are in very dilute solution. Much higher grade "ore" is available from terrestrial sources.⁶³ In the distant future, with the depletion of other sources and with sufficiently cheap power, the production of other minerals from the sea may become economically expedient. Meanwhile, it is the concern of domestic law and an international lawyer can confidently dismiss it as a practical problem.

⁶²Pike and Spilhaus, op. cit., p. 7.

⁶³D.H. Gaber and D.F. Reynolds, "Economic Opportunities in the Ocean," Technical Review of Battelle Memorial Institute, 14:12, December 1965, p. 8.

CHAPTER III

THE LAW AND THE RESOURCES OF THE CONTINENTAL SHELVES

Mineral Resources

There is a separate body of international law which governs the exploitation of the sea bed and subsoil; its first principle being exclusive or sovereign rights not free use as in the waters and surface of the sea. This principle, presently expressed in relation to the continental shelf, is not without early precedent. The Cornwall Submarine Act and the plans for the British-French channel tunnel were previously mentioned. Comment on the principle can be found in the writings of Oppenheim,⁶⁴ Sir Cecil Hurst,⁶⁵ Professor Gidel,⁶⁶ and Hackworth.⁶⁷

The first significant development in the consummation of this law was the Anglo-Venezuelan Treaty of 1942, under which the United Kingdom and Venezuela fixed the limits of their respective rights "to sovereignty or control" of "parts of the submarine areas of the Gulf of Paria," i.e. with respect to the "sea bed and subsoil outside of the territorial

⁶⁴H. Lauterpacht, Oppenheim's International Law, (7th ed.), pp. 575-76.

⁶⁵British Yearbook of International Law, (1923-24), p. 34.

⁶⁶Columbus, International Law of the Sea, 1st ed., p. 541.

⁶⁷G.H. Hackworth, Digest of International Law, II, p. 680.

waters of the High Contracting Parties." This was not in conflict with the law governing the water, for Article VI states that;

in no way would the treaty affect the status of the waters of the Gulf of Paria or any rights of passage or navigation on the surface of the seas outside the territorial waters of the Contracting Parties.⁶⁸

However, the United States Proclamation of 1945, is the principal implementing antecedent of the legal continental shelf doctrine. It stated that;

Having concern for the urgency of conserving and prudently utilizing its natural resources, the Government of the United States regards the natural resources of the subsoil and sea bed of the continental shelf beneath the high seas but contiguous to the coast of the United States as appertaining to the United States subject to its jurisdiction and control.⁶⁹

The Proclamation, like the Anglo-Venezuelan Treaty, does not affect the superjacent waters, regarding which it also declares explicitly that, "the character as high seas of the waters above the continental shelf and the right to their free and unimpeded navigation are in no way thus affected."⁷⁰ This was the starting point for a number of similar unilateral declarations by other states which claimed, with a few significant exceptions, precisely the same thing. That this was the point of departure for a new concept is shown in the arbitral decision in the dispute between Petroleum Development

⁶⁸League of Nations Treaty Series, Vol. CCV, no. 4829, p. 680.

⁶⁹Whiteman, op. cit., p. 757.

⁷⁰Ibid.,

Limited and the Sheikh of Abu Dhabi in 1953. The umpire, Lord Asquith of Bishopstone, found that since the concept of the continental shelf was not known in 1939, the British concession granted in that year included only the soil under the territorial waters of Abu Dhabi; that the subsoil of the continental shelf was freely available to the Sheikh for disposal through a second concession; that, therefore, the British company's claim to possess a concession to the continental shelf reserves had to be rejected.⁷¹

During the early 1950's a great academic dispute arose as to the legal validity of the concept of the continental shelf. Arguments pro and con were voiced at every conference on the sea and found in many articles and publications. The opposition based its objections principally on the contention that effective occupation was impossible, the free seas principle was being violated, and unilateral action by states did not constitute international law.⁷² This discussion remained largely theoretical after the adoption of the Convention on the Continental Shelf. This convention, drafted in 1958, became effective June 10, 1964, and has been ratified by twenty-nine nations.⁷³

⁷¹Gerhard von Glahn, Law Among Nations, p. 314.

⁷²For an excellent summary and commentary on the opposing view in this dispute see Indian Yearbook of International Affairs, VI, 1957, "The Land Under the Sea," by G. Goddard, pp. 81-103.

⁷³The following countries had ratified the convention as of November 1965: Albania, Australia, Bulgaria, Byelorussia, Cambodia, Colombia, Czechoslovakia, Denmark,

The essential elements of the convention are as follows: exclusive sovereign rights are recognized to the sea bed and subsoil resources of any continental shelf to a depth of 200 meters (100 fathoms), or beyond that limit to where the depth of the superjacent water permits the exploitation of the natural resources of the shelf. If a coastal state chooses not to exploit such resources, its sovereign rights prevent any other state from undertaking such exploitation without the express consent of the coastal state. The treaty further provides that the rights of the coastal state over the shelf do not depend on occupation or on any express proclamation. The rights of the coastal state over the shelf do not in any manner affect the legal status of the superjacent waters as high seas or that of the airspace above those waters. (Articles I-III) The coastal state is entitled to construct and operate on the continental shelf installations of various sorts necessary for the exploitation of its natural resources. Safety zones, not to exceed a distance of 500 meters from such installations, could be established by the coastal state. These installations are denied the status of islands, lacking any territorial sea of their own. (Article V) Where the continental shelf was adjacent to the territories of two or more states whose coasts were opposite each other, the boundary of the shelf belonging to such states must be determined by

Dominican Republic, Finland, France, Guatemala, Haiti, Israel, Jamaica, Madagascar, Malaya, New Zealand, Poland, Portugal, Rumania, Senegal, South Africa, Uganda, Ukraine, United Kingdom, United States, U.S.S.R., and Venezuela.

agreement between the states in question. Failing such agreement, the boundary line would be the median line, equidistant from the nearest points of the baseline from which the breadth of the territorial sea of each state was measured. Where the shelf was adjacent to the territories of two adjacent states, the boundary of the shelf would be determined by the application of the principle of equidistance from the nearest points of the relevant baselines.⁷⁴ (Article VI)

The eight nations which lay claim to the continental shelf, but refuse to ratify the treaty, have done so principally because this treaty does not confer exclusive rights to the resources of the superjacent waters.⁷⁵

Animal and Vegetable Resources

The vegetable resources of the sea bottom present essentially the same opportunities and problems as those which float freely and, since these were previously discussed, need not be elaborated on here.

The animal resources of the sea bottom are another story. There is no consensus on the law governing the sedentary species of sea life which inhabit the ocean floor.⁷⁶ Having

⁷⁴The Law of the Sea, p. 24.

⁷⁵These nations are Argentina, Chile, Costa Rica, El Salvador, Korea, Mexico, Nicaragua, and Panama. Cambodia relinquished her claim to the superjacent waters in 1962.

⁷⁶The outstanding treatment of this problem is that done by Richard Young entitled "Sedentary Fisheries and the Conservation on the Continental Shelf," American Journal of International Law, Vol. CV, (1961), p. 359.

accepted the principle that the continental shelf appertains to the coastal state, there remains among nations a legal dispute as to which species of fish "naturally" come with the shelf and are thereby subject to sole exploitation by the coastal state. Once again it is necessary to examine the scientific factors involved in order to comprehend the legal ambiguities which have resulted.

The vegetable and animal resources of the bed of the shelf and the waters over it are extremely varied in their individual natures and the nature of their interrelationships. This complex is described as the "benthomic environment," benthos. There are three groups in this benthos which concern us here, a) those permanently attached to the bottom, b) those that walk or crawl on the bottom, and, c) those that float or swim near the bottom. Some organisms may belong to one of these groups at one stage of their lives and to another group at a different stage. Some of the benthonic forms may at times draw away from the bottom; similarly some pelagic forms may at times be found near the bottom. The precise relation of a species with the bottom can be classified with respect to the organism's requirements 1) for appropriate living space, 2) for its general physiological functions, 3) for its food and nutrition and, 4) for reproduction. As to living space, the organism lives a) within bottom materials, b) on the bottom materials by attachment, c) on the bottom surface, lying, d) on the bottom but moving or, e) in the waters overlying the shelf. It must be remembered,

nevertheless that all these creatures "live in the water" and thus could be claimed as an integral part of the "free" superjacent waters above the bed.⁷⁷

Except in the case of certain coral, sponge, and mollusk beds that might be clearly recognized by law as appertaining to a state from "time immemorial," the law has as yet not succeeded in separating those species which come with the shelf from those which do not. The state is left to choose the interpretation which best suits its economic interests and which it can enforce.

There is one further point of conflict between sovereignty over the continental shelf and the freedom to exploit pelagic species, both recognized under international law. It is the status of fishing structures (stakes, traps, poles, nets) embedded in or affixed to the continental shelf outside of territorial waters. Article XIII of the not yet accepted Geneva Fishing Convention provides for the coastal state to regulate such fishing if it is "close to the territorial waters" and has "historically done so," provided that non-nationals are permitted on an equal footing.⁷⁸ This is an inadequate solution. It can be assumed that future states, in practice, will claim the right to exclude "foreign" fixed fishing apparatus from their sovereign territory while simultaneously recognizing their right to construct such structures for pelagic fishing to the extent they deem practicable.

⁷⁷Amador, op. cit., pp. 91-92.

⁷⁸Ibid., p. 192.

Boundary and Control

This convention is unquestionably a great accomplishment in the struggle to keep the law relevant to the changing requirements on the world scene. It has also provided the stability and protection necessary to generate commercial interest. It is indeed looked upon within domestic business circles as offering opportunities equivalent to the Oklahoma Land Rush of the 1890's.⁷⁹ Notwithstanding the obvious benefits and optimism generated by this convention, it is subject to several serious flaws which we shall now investigate.

In the first place, the criteria for the delimitation of the seaward boundaries of the area of sovereignty are artificial and inadequate. They are, in the words of Lauterpacht, "no more than figures of speech."⁸⁰ The attempt to use a geological excuse for legalizing the intention of expropriating offshore resources was successful for the Truman Doctrine of 1945. At that time the object was the petroleum resources off the East and Gulf Coasts of the United States where, coincidentally, there is a well-defined, morphologically homogenous continental shelf which changes to a continental slope at almost precisely 200 meters. The inadequacy of this relationship between the law and the physical contour beyond the three mile limit became apparent as soon as other states began to eye their continental shelves with a

⁷⁹Undersea Technology, p. 9.

⁸⁰BYIL, (1950), p. 385.

view to making similar claims. They saw them ranging from 0 to 800 miles in width, and subject to every imaginable geographical conformation which made their exact outer limit indefinable.⁸¹

It was at this point that the completely arbitrary criterion of 100 fathoms was conceived. This exact depth was chosen as a close approximation of the mean depth of the world-wide continental shelf (actually seventy fathoms) but this criterion, in effect, served to divorce the right of sovereignty over the adjacent sea bed from any geological justification. However, this second criterion was found to be lacking in utility because some continental shelves were discovered to be well-defined and easily recognizable, but below the legal depth of 200 meters (e.g. the North Sea).

A third criterion, exploitability, was then added. There was at the time no real worry over the inclusion of this concept because, as Lauterpacht stated in 1950, "even 200 meters errs on the side of optimism when assessing the capability of exploitation."⁸² These three mutually exclusive, contradictory standards became part of the 1958 Convention and, subsequently, the present law. In view of the technological progress achieved to date, it can only be concluded that the outer limit of the sea bottom appertaining

⁸¹ United Nations Conference on the Law of the Sea.
pp. 39-46.

⁸² BYIL, (1950), p. 385.

to a coastal state is undefined.⁸³

A second major defect in the convention is the lack of clarity regarding the exact nature of control which the state exercises over its continental shelf. The term "sovereign rights" used in the convention leaves the exact nature of the rights of the coastal state lying somewhere between jurisdiction for orderly exploitation and complete control. There was considerable debate at the conference over the wording to be used in the convention and its implications. The states which wanted greater absolute control argued that:

those submarine areas were dependent on or appurtenances of the mainland. Hence, the coastal state, as a sovereign of the mainland also exercises sovereignty over the continental shelf.⁸⁴

The main objections to this was that recognition of full sovereignty over the continental shelf would inevitably result in infringements on the freedoms exercised in the superjacent waters and airspace. This danger was real for two delegations, Peru and Paraguay, had already drawn these conclusions in the course of the discussion and the same conclusion had been reached at an earlier conference by Mexico. The result of this divided opinion was compromise and confusion. On one hand one is left with the assurance that,

contrary to some apparently informed opinions it (the convention) does not sanction the inclusion of the

⁸³For a commentary on the progression of these criteria for definition of the outer limit see McDougal and Burke, Public Order of the Ocean, pp. 669-686.

⁸⁴Remarks of Argentina, S.R. 4, p. 3.

continental shelves as part of the national territory. The competence conferred is not all embracing and in particular it does not appear to include the full range of the legislative authority of the state.⁸⁵

On the other hand, one cannot find what competence is specifically lacking or which portion of the legislative range is inapplicable. For all practical purposes, the state exercises full and absolute sovereignty regardless of the name such sovereignty is given.

⁸⁵William T. Burke, "Ocean Sciences, Technology and the Future International Law of the Sea," Proceedings of the 1966 Law of the Sea Institute scheduled for publication in 1967.

PART II

THE REGIME FOR EXPLOITATION OF SEA RESOURCES -

THE PROBLEM OF THE DEEP SEA BOTTOM

The deep sea bottom is an area consistently ignored by the international lawyer and is the only zone of the sea which has not been the subject of a "convention" of codification or clarification. The reason is easily discernable. At the Conferences of 1958, exploration and exploitation of these areas was unimaginable. Lauterpacht, writing on the ambiguity of boundary between the continental shelf and the land beyond, said that "it is an academic question since man will never in any case be able to exploit the ocean even to a depth of 200 meters."⁸⁶ Mr. Francois stated in his concluding remarks before the 6th Committee of the United Nations General Assembly (1956), in which the definition of the continental shelf was presented;

The Commission (ILC) had not shared the apprehension of the Norwegian delegation that the definition given in Article 67 should lead to a division of all the oceans among the coastal states. The time still seemed to be remote when technical development would allow the exploitation of the sea bed at depths over 200 meters.⁸⁷

As recently as 1965, the State Department saw no concern or

⁸⁶ H. Lauterpacht, "Sovereignty over Submarine Areas," BYIL, Vol. 27 (1950), p. 432.

⁸⁷ Whiteman, op. cit., p. 839.

future problem with this land beyond the 100 fathom curve. Expressing the view officially, Douglas MacArthur II, Assistant Secretary of State for Congressional Relations, stated in a letter to Chairman Bonner, House Committee on Merchant Marine and Fisheries, that that Department was unaware of a need for study of any international law or relations problems relating to the development of the material resources of the deep ocean.⁸⁸ An examination of both the known resource potential and the intentions and capabilities of commercial exploitation will reveal how rapidly the "impossible" of 1958, has been achieved and how real a problem is the lack of study of the international law of this area.

⁸⁸See Appendix A for complete text of the amazing letter from Mac Arthur to Congressman Bonner which contains the statement.

CHAPTER IV

DEEP SEA POTENTIAL

Resources

In the pelagic areas of the ocean, nature is working on a grand scale to separate and concentrate many of the elements that enter sea water. The minerals that are formed in the deep sea are frequently found in high concentrations since in these areas of the ocean there is relatively little clastic material deposited to dilute the chemical precipitates. Eventually the common igneous rocks of the continents may serve as a source of the minerals needed in any industrial society. The pelagic sediments of the ocean, however, will probably be considered first, for these sediments contain an average of about ten times the amount of the industrially important metals as do the igneous rocks of the continent. These ocean floor sediments also possess other advantages when being considered as a material to mine. They are widely distributed, near most markets, fine grained, unconsolidated, and in a water atmosphere which makes the use of automated hydraulic systems for recovery practical.⁸⁹

⁸⁹N.H. Gaber and D.F. Reynolds, "Ocean Engineering and Oceanography from the Businessman's Viewpoint," Transactions Marine Technology Society and American Society of Oceanographic Joint Conference, Vol. I, June 14-17, 1965, p. 130.

a) Red clay.⁹⁰ Red clay covers about 102 million square kilometers of the ocean floor. At an average depth of about 200 meters there would be some 10^{16} tons of red clay on the ocean floor. At an average rate of formation of five millimeters per 1000 years, the annual rate of accumulation of the red clay is about 5×10^8 tons. Table IV lists some statistics concerning the amount of and rate at which the elements are annually accumulating in these sediments. While from a mineral resource standpoint the composition of the red clay is not particularly startling, this material may have some value as a raw material, to be used in the manufacturing of products such as construction materials or it may, in the future, serve as a source of various metals. While the average assay for alumina is about 15 per cent, individual samples of red clay have assayed in excess of 25 per cent alumina. Copper contents as high as 0.20 per cent have been found in some red clays. Nickel vanadium, cobalt, lead, zirconium, and several of the rare earth elements show up in red clays in amounts of several hundredths of one per cent. An interesting aspect of the red clays is that the valuable minerals are generally contained in grains with a size range of 0.5 to one millimeter while the gangue materials are contained in clay sized particles. Thus, a sizing process could easily produce a concentrate of the valuable metals.

⁹⁰The data on amount and value of bottom sediment materials (clay and oozes) is compiled from figures presented by John L. Mero, President, Ocean Resources Incorporated, at the Marine Technology Society Convention, June 27, 1966.

b) Calcareous oozes. Calcareous oozes cover some 128 million square kilometers of the ocean floor or about 36 per cent of its total area. The average thickness of the calcareous ooze layers has been estimated to be about four hundred meters. Thus, there should be at least 10^{16} tons of calcareous oozes in the ocean. These oozes are estimated to be forming at the average rate of about one centimeter per 1000 years, thus each year some 1.5 billion tons of calcareous oozes are added to the ocean floor. Limestone, for which these oozes could be substituted is presently mined at an annual rate of about 0.4 billion tons world-wide. If only 10 per cent of the ocean floor deposits prove minable, the reserves would be about five million years at our present rate of consumption. More interesting, the calcareous oozes are accumulating about four times as fast as the world is presently consuming limestone.

c) Siliceous oozes. Siliceous oozes cover about thirty-eight million square kilometers of the ocean floor. At an assumed thickness of about two hundred meters, there should be some 10^{15} tons of these oozes. Normally they could serve in most of the applications for which diatomaceous earth is used, that is for fire and sound insulation, in lightweight concretes, as filters, and as soil conditioners.

d) Petroleum deposits. It is easy to think of reasons why the deep ocean floor does not contain petroleum deposits - the thin sedimentary section, high chance of destruction of organic matter prior to burial, probable lack of warping or folding over many areas and consequent lack of drive for

migration and existence of traps for accumulation. However, the ocean floor is geologically complex. Most of it does not contain recoverable petroleum, just as most of the land area does not; but the possibility for petroleum cannot be ruled out on this account.⁹¹ V.F. McKelvy of the United States Geological Survey has advised the oil corporation prospectors to:

consider the nutrient rich waters along the equatorial currents and those in polar regions that are so productive of organisms. Consider the possible local accumulation of moderately thick sediments generated within the ocean by volcanic, chemical, or biochemical processes or turbidity currents. And consider evidence for diastrophic movements of the ocean floor suggested by its topography and by geophysical observations.

A real coincidence or concatenation of these phenomena might well lead to the accumulation of petroleum. With the possible lateral shift of ocean currents over geologic times, with polar migration, and with continental and island development, favorable environments might be widely distributed.⁹²

Oil seeps are known in the Gulf of Mexico beyond the limits of the continental shelves and numerous structures suggestive of salt domes have been identified there in the Sigsbee Deep.⁹³ The Mozambique Channel between Madagascar and the African Continent is believed to be underlain by a

⁹¹L.G. Weeks, "World Offshore Petroleum Resources," Bulletin American Association of Petroleum Geologists, Vol. IXC (1965), pp. 1680-1693.

⁹²E.V. McKelvey and Chase Livingston, "Selecting Areas Favorable for Subsoil Prospecting," Transactions MTS Convention, June 27, 1966.

⁹³G.E. Murray, "Salt Structures of Gulf of Mexico Basin," a review in the Bulletin American Association of Petroleum Geologists, Vol. C, p. 439-478.

large synclinorium and seismic profiling has identified⁹⁴ many areas in all the oceans in which there appear to be sediments four to five kilometers in thickness. It is not possible yet to say that these or other structures contain recoverable petroleum. However, the petroleum industry, fully aware of this potential and the magnitude of future needs for petroleum, is engaged in serious study of these areas.

e) Manganese nodules. These small, black to brown friable concretions were discovered to be widely distributed through out the three major oceans of the world almost one hundred years ago by the famous "Challenger" and "Albatross" expeditions. It is estimated that there are some 1.5 trillion tons of manganese nodules on the Pacific Ocean floor alone and that they are forming in this ocean at an annual rate of about ten million tons. Averaging four centimeters in diameter and lying loose at the surface of the sea floor sediments, they are found in concentrations as high as 100,000 tons per square mile. The manganese nodules from present calculations are indicated to be highly economic to mine. Grading as high as 2.5 per cent copper, 20 per cent nickel, 0.3 per cent cobalt, and 36 per cent manganese in the same deposit, or as high as 2.1 per cent cobalt or 50 per cent manganese in other individual deposits, the ocean floor manganese nodules would be considered as high grade ore if found on the continents.

⁹⁴See U.S. Geological Survey Map, I-380, 1963, "The Indian Ocean, the Geology of its Bordering Lands and the Configuration of its Floor."

Another interesting aspect of these nodules is that over a large lateral distance their composition varies markedly. Thus a mine site can be shifted into these deposits with a mix of metals that is most amenable to market conditions. Flexibility such as this in choosing the grade of material to be mined is a great advantage and one which the mining industry does not normally have in land mines.

Table III lists statistics concerning the amounts of various elements in the nodules and the land deposits. It can be seen that many elements are accumulating in the manganese nodules now forming on the Pacific floor faster than they are presently being consumed. In fact, three times as fast in the case of manganese, twice as fast in the case of cobalt, and as fast in the case of nickel. Like many other mineral deposits of the sea, the manganese nodules would be a renewable resource; but this fact is today of academic interest only, for the sea bed reserves of the minerals contained in presently minable deposits are generally measured in terms of hundreds of thousands of years.⁹⁵

f) Hot springs manganese deposits. From an economic standpoint, the most interesting sediments are the thick, high grade deposits of manganese oxides or carbonates associated with submarine hot springs or volcanic exhalations. D.F. Hewett has described these deposits rather fully. They are of high quality, range from a few to scores of feet in

⁹⁵John Mero, op. cit..

thickness, and are non-nodular in texture.⁹⁶ Unlike many of the nodular occurrences, which are scattered over a wide area and accumulate very slowly, the stratified deposits are lens-shaped and are confined to areas a few or a few tens of miles in size and accumulate very rapidly. These precipitates only recently have been identified from the submarine Banu Nuhu Volcano (Indonesia), in the deeps of the Red Sea, and off the Southern coast of Japan. Areas of active or recently active volcanism are the prime targets for such deposits.⁹⁷

Although the facts related above may seem impressive when first encountered, they have been either known or surmised for a number of years.⁹⁸ The minerals themselves offer no more problem to the lawyer than do Saturn or Venus. For without the technological means to gain access to the deep sea and to recover them, the minerals have no real value. It is man's technological achievement which has altered the nature of the deep sea bottom and has added a new dimension to the law of the sea. In order to understand the extent of this change it is necessary to examine in greater detail the present and projected technological developments.

⁹⁶D.F. Hewett, "Stratified Deposits of the Oxides and Carbonates of Manganese," mimeographed paper soon to be published in Economic Geology.

⁹⁷A.R. Kinkel, "Massive Pyritic Deposits Related to Volcanism and Possible Methods of Emplacement" to be published in Economic Geology.

⁹⁸For an example see the report on the deep sea deposits contained in the report of the scientific results of the voyage of "H.M.S. Challenger," published in London in 1891, (Vol. V, pp. 1-525).

Access

a) Manned submersibles. As recounted earlier, the "Trieste" penetrated the Marianas Trench to the deepest known part of the ocean in 1956. The unmaneuverable, bulky, and dangerous "Trieste" is a relic when compared with our present family of deep diving submersibles. In the deep diving class are included both the "Aluminaut," and North American's "Beaver" which can operate to a depth of 15,000 feet. In the mid-range class (2000-6000 feet) are the U. S. Navy's "Alvin," "Deep Jeep," and "Moray;" and industry operated vehicles such as Lockheed's "Deep Quest," a 6000 footer and Westinghouse's successfully tested "Deepstar." This 4000 foot craft modeled on Cousteau's diving saucer is the prototype of a 12,000 and 20,000 foot version. The most recent addition to General Dynamics' "Star" family, the "Star III," has a maximum 1,200 foot depth. One of the most promising of all is the little publicized "DOWB" being built by General Motors, a deep ocean work boat with advanced hull design, precision maneuvering, and great durability and versatility.⁹⁹

b) Unmanned submersibles. There are a variety of these "robot" devices the most successful and famous of which is the military "CURV" of Palomares fame. It is mobile in three dimensions and operates at a maximum depth of 2000 feet. Another successful telechiric system was developed at

⁹⁹ With the exception of General Motors, each developing company has available for distribution a publication describing in detail the capabilities of its submersible.

the Applied Physics Laboratory at the University of Washington. This research vehicle can be commanded at a depth of 6000 feet by coded sonar pulses.¹⁰⁰

c) Man in the sea. One of the most dramatic extensions of man's capability has been the improvement of his ability to operate independantly at ever increasing depths for ever lengthening periods of time. Dr. C.J. Lambertson contends that there is presently no physiological barrier to prohibit a man from descending to a depth of 1000 feet and performing almost normally.¹⁰¹ Yves Cousteau has developed the prototype of the mechanical apparatus that would permit such a dive, and is experimenting on nitrogen-hydrogen-oxygen mixtures to permit even greater depths.¹⁰² Within ten years, Cousteau contends, he will be able to put a free swimmer at 5000 feet. In the U. S. Navy's Sea Lab II experiment, twenty-eight men lived forty-five days inside a fifty-seven foot chamber at a depth of 205 feet. So successful was the experiment that a similar one, Sea Lab III, will be run in 1967. The chamber will be placed in 430 feet of water and dives to a depth of 600 feet will be made.¹⁰³

¹⁰⁰ From data received from Thomas F. Horton, Manager Deep Star Systems Marketing, Westinghouse Corporation.

¹⁰¹ The theme of a paper presented by Dr. D.J. Lambertsen, Professor of Pharmacology, School of Medicine, University of Pennsylvania, entitled "Physiological Barriers and Break Throughs in Undersea Activity."

¹⁰² Ibid.

¹⁰³ "Sea Lab II: A Summary Report," O.N.R. Department of the Navy, Naval Research Reviews, November 1965.

Recovery

Man has developed a parallel capability to recover minerals in this environment which has so recently become accessible.

a) Drilling (petroleum, gas, and sulfur). In 1961, the Federal Government opened the lands off the coast of California to competitive bidding for oil leases. To cope with the environmental conditions which exist there, relatively deep water and rugged bottom, an alternative to the bottom supported shallow rig used in the Gulf of Mexico had to be developed. The solution was a floating, semi-submersible, dynamically positioned drilling rig. In 1962, Shell Oil Company drilled the first well from a floating platform in 250 feet of water. In 1964, Shell drilled in 514 feet of water, and, this year, a well was sunk in 632 feet, the deepest yet.¹⁰⁴ Today there are 215 mobile and floating rigs operating in waters throughout the world. In Project Mohole, the deep crustal study sponsored by the National Science Foundation, it is planned to use a more sophisticated rig of this type to drill in 14,000 feet of water near the Hawaiian Islands and penetrate the earth surface to 17,000 feet.¹⁰⁵

b) Mining. There are presently two experimental types of surface dredges capable of recovering unconsolidated

¹⁰⁴ N.E. Montgomery, Shell Oil Company, "Drilling in the Sea From Floating Platforms," Transactions MTS Convention, pp. 230-31.

¹⁰⁵ Gordon G. Lill, Director Project Mohole, "Mohole Project," Oceanology Yearbook, 1967, p. 62.

minerals beyond the 600 foot mark. They are the airlift, with a 1,500 foot operating depth, and the less expensive, deeper operating dragline which can be used to a depth of 5000 feet.¹⁰⁶ Figure IV shows the approximate time table for the development of economic mining systems. This time table, obtained from International Minerals and Chemical Corporation, Skokie, Illinois, is of particular significance because it represents the actual outlook of a realistic profit-conscious mining company.

c) Telemanipulation systems (TMS). TMS is a generic term for systems used to accomplish manual tasks at or near the sea floor. Such systems have provided man with the capability to install, operate, and maintain sea floor facilities and installations. Although there are many such systems in existence, two examples will show their amazing versatility and capability. The first, "CURV"(cable controlled underwater research vehicle) uses television and sonar to locate a target. It then uses a grasping device to either attach a line to the object or to carry the object back to the mother ship. The external manipulator arms aboard the "Beaver" are typical of those on the manned submersibles mentioned previously. "Beaver" has both a hydraulic grappling arm and a manipulator arm with nine interchangeable heads. These heads include a jet pump which delivers a stream of water with a

¹⁰⁶C.G. Wellington and M.J. Cruckshank, "Review of Available Hardware Needed for Undersea Mining," Transactions MTS Convention, 1966, p. 108.

central velocity of three FPS at a range of six feet from the submerged nozzle, an impact wrench capable of 1 3/4 inch bolts, a stud gun which can penetrate one inch naval steel and implant studs of 8000 pound lead rating, a hook claw which can carry, shear, twist, and grip, a chuck for drill, grinding wheels, wire brushes, and a cable cutter. Figure V shows the oil well head installation tasks, previously performed by a diver in shallow water, which can now be done at 2000 feet by "Beaver."¹⁰⁷

The legal implications of all these facts are clear. Man has the capability and the incentive to exploit the resources beyond the geographical continental shelf and at far greater depths than 600 feet. The continental shelves comprise about 8 per cent of the ocean floor. At present an additional 22 per cent of deep sea bottom is exploitable, within five years this figure will jump to 34 per cent, an area larger than the continental land masses of the world. This land will not become accessible in a steady outward progression from the continents; open areas will often be geologically unrelated and physically removed from the continents. Examples of such accessible zones are the Rockall Bank, the Arafural Sea, the Gulf of Siam, the Yellow Sea, the Bering Sea, the New Zealand Plateau, and parts of the Mid

¹⁰⁷ "Task Analysis of Offshore Oil Development," a pamphlet describing the capabilities of "Beaver," published by North American Aviation, Inc., Deep Submergence Systems, Anaheim, California.

Indian Ridge, Pacific Antarctic Ridge, and Mid Atlantic Ridge. In addition to these general areas, there are the sea mounts. Since the first one was discovered during World War II by the American geologist, H.H. Hess, approximately 10,000 of these flat-topped, conical shaped mountains have been discovered at depths of 90 to 500 feet below the surface. Plans are being made to use these sea mounts as platforms for exploitation colonies with Sea Lab type installations.¹⁰⁸

108

For easy identification of these areas and a perspective of the exploitable areas of the ocean bottom refer to HO-W/000 Series, "World Bottom Contour Chart," U.S. Navy Hydrographic Office, Washington, D.C.

CHAPTER V

INTERPRETATION OF THE LAW APPLICABLE TO THE DEEP SEA BOTTOM

A biological survey completed by Woods Hole Oceanographic Institution in 1965, reports an abundance of phosphorite and crusts and nodules of manganese oxide on the Blake Plateau, just off the South Eastern coast of the United States. The encrustations are solid looking coatings on the bottom covering continuous areas of at least ten square meters. The water over these is between 750 and 1,500 meters deep. The Blake Plateau is adjacent to the continental shelf, however, it is a separate, unrelated deep sea area.¹⁰⁹

Is the wealth of the Blake Plateau equally available to all nations, or does this area, sixty miles off the Florida coast, appertain to the United States by virtue of its being an area "where the depth of the superjacent waters admits of the exploitation of the natural resources?"¹¹⁰ Does it appertain to the Bahamas Islands, or half to each? Unfortunately no case precedents, treaties, or proclamations exist which clarify the ambiguities of the Geneva Convention of the Continental Shelf. Furthermore, academic writers and

¹⁰⁹K.O. Emery, "Some Potential Mineral Resources of the Atlantic Continental Margin," U.S. Geological Survey Professional Paper, 525C, p. C159.

¹¹⁰Article I, Geneva Convention on the Continental Shelf.

jurists have been significantly reticent on the subject.¹¹¹

Legal staffs of individual companies as well as the staffs of trade organizations such as the American Petroleum Institute are extremely reluctant to discuss the subject with outsiders. However, there has not been a complete lack of discussion on the subject and generally two schools of thought exist concerning the proper interpretation of the law. These can be classified as the restrictive and the expansive schools.

Restrictive School

In essence, this school maintains that no state has the right to unilaterally exercise its sovereignty or its jurisdiction and control over minerals lying on or beneath the ocean floor beyond the continental shelf. This school concludes from the shelf convention that, for the purpose of exploring and exploiting, the natural resources of the continental shelf, the coastal state exercises sovereign rights over the shelf only to a superjacent water depth of 200 meters. If a state's shelf extends beyond a superjacent water depth of 200 meters, the state exercises sovereignty over that portion of shelf which admits of exploitation, the furthestmost limit of sovereignty being the geographic edge of

¹¹¹The only two published works which specifically address themselves to the resources of the sea and international law are Shigeru Oda's, "The International Control of Sea Resources" and "The Exploitation and Conservation of the Resources of the Sea" by Garcia Amador. Each devotes one paragraph to that land beyond the continental shelf. Other presentations, papers, or lectures which do exist have been almost entirely prepared since January 1, 1966.

the continental shelf, i.e. that part at which the shelf breaks sharply downward.¹¹² Restrictivists refute the argument that the continental slope, since it forms a part of the undersea geographic extension of the coastal state, should be subject to that state's sovereign control. They show that it is dubious that the drafters of the convention had this in mind. It is argued first that the drafters used the term "continental shelf" rather than "continental shelf and continental slope" and, secondly that they used an ocean depth and exploitability test rather than a test tied to the natural undersea geographic extension of the coastal state itself. If their intention had been to include the continental slope the drafters probably could have formulated a more precise definition. They could have given to coastal states sovereign rights over the undersea lands which flow naturally from the state to the sea, terminating the definition at that point where the land mass reaches the ocean bottom. Additionally, oceanographers make a distinction between the continental shelf and the continental slope and, since the drafters relied at least partially on geographic considerations, it is reasonable to assume that the drafters made the same distinction. Finally, Webster's definition of the continental shelf makes a clear distinction between the

¹¹²This summary of the restrictivist school is based on the presentation by William C. Tubman of Kennicott Copper Corporation entitled "The Legal Status of Minerals Located on or Beneath the Ocean Floor Beyond the Continental Shelf."

shelf and the continental slope in the following manner:

A continental shelf of variable width forming a border to nearly every continent. The water above it is comparatively shallow (usually less than 100 fathoms). The rapid descent from it to the ocean depths is known as the continental slope.¹¹³

Further analysis shows that the geographic concept of the continental shelf includes the convention concept of the shelf but that the convention concept does not include at all times the geographic concept. Legally, then, those states that have consented to the convention have agreed thereby to delimit their sovereignty at that point where the shelf, as it is defined in the convention, ceases. This point need not coincide with the geographic extent of the shelf; whether or not it does depends upon the coastal state's ability to exploit the shelf to its geographic limit.

The following statements extracted from the record of meetings of delegates to the 1958 Geneva Conference supports this restrictive view:

Miss Gutteridge, the United Kingdom delegate, commenting on the exploitability criterion was summarized as saying, "The criterion of exploitability needed further consideration, since it was open to the criticism that it would make the extent of the continental shelf uncertain."¹¹⁴ If the right of exploitability were to extend, without limit, to

¹¹³Webster's New International Dictionary, 2nd ed. unabridged, G. & C. Merriam Company, 1966.

¹¹⁴Official Records of the United Nations Conference on the Law of the Sea, Vol. VI, A/Conf. 13/42, p. 4.

sea there would be no reason for the United Kingdom delegate to voice concern over the uncertainties. She further stated that "she felt that the article should also apply to detached areas of the shelf in proximity to the continental shelf."¹¹⁵ The use of the words "detached area" could con-
note that the speaker was contemplating a geographic de-
finition of the continental shelf rather than some legal con-
cept of the shelf.

Mr. Carl Sable, the Norwegian delegate, was summarized as follows: "although the conception of the continental shelf in the International Law Commission's draft was not based strictly on geographic considerations, it has been greatly influenced by them."¹¹⁶ Thus he intimated that the bases for the definition of the continental shelf were not only geology but also exploitability and the 200 meter test and that these two might legally modify the extent of a particular geo-
graphic continental shelf that a state may claim.

Garcia Amador, the Cuban delegate, in urging the acceptance by the conference of the exploitability test was summarized as follows: "... for his country the problem under consideration was an academic one since the continental shelf lies entirely under internal waters of the territorial sea."¹¹⁷

¹¹⁵Official Records of the United Nations Conference on the Law of the Sea, Vol. VI, A/Conf. 13/42, p. 4.

¹¹⁶Ibid.

¹¹⁷Ibid., p. 25.

It is argued that if Mr. Amador understood the exploitation criterion to extend beyond the geographic limitation of the shelf, how would he be able to say with apparent certainty that the problem is academic unless he had in mind a geographic definition of the continental shelf?

In summary, there are two "convention" tests, depth and exploitability, both of which can be applied to the geographic continental shelf. What is the purpose of the depth test? Why did not the delegates submit the exploitability test by itself and not consider depth? Why not give the coastal state sovereign rights as far to sea as that state can exploit the sea bed and subsoil? The 200 meter test, according to the restrictive school, is the first criterion to be applied because that is the generally accepted water depth at the point where the continental slope commences. The delegates knew that this was an imperfect definition, since the shelf at times extends beyond and beneath a much greater water depth and, therefore, they fastened a further condition. This additional condition was exploitability beyond the 200 meter depth which would give to the coastal state a reasonable working rule to follow in exercising its sovereign rights to the continental shelf.

Expansive School

The expansive interpretation of the convention takes quite the opposite view from that expressed above. It essentially sees the addition of the exploitability criterion as providing an open end to the seaward extension of the territory over which the state may exercise its sovereign

rights. The continental shelf, in their view, is not used in the geological sense and could as easily be replaced with some less confusing term such as "submarine area."¹¹⁸

The wording of the convention's definition of the continental shelf is such that it leaves no doubt that the area referred to is all that submarine area adjacent to the coastal state to a depth of 200 meters or beyond to a depth where the water admits of exploitation, regardless of the existence or non-existence of a morphologically homogeneous geologically recognizable continental shelf.

In order to substantiate this position it is necessary to look at the interpretation placed on this definition by the International Law Commission (ILC) who submitted the draft, the Fourth Committee (continental shelf) of the United Nations Conference on the Law of the Sea of 1958, who accepted the draft, and the nations who ratified it.

In regard to the definition of the continental shelf, the ILC stated that;

While adopting, to a certain extent, the geographical test for the continental shelf as the basis of the juridical definition of the term, the Commission therefore in no way holds that the existence of a continental shelf, in the geological sense as generally understood is essential for the exercise of the rights of the coastal state as defined in these Articles. Thus if, as is the case in the Persian Gulf, the submarine areas never reach the depth of 200 meters, the fact is irrelevant for the purposes of the present Article. Again, exploitation of a submarine area at a depth exceeding 200 meters is

¹¹⁸Young, "The Legal Status of Submarine Areas Beneath the High Seas," AJIL, Vol. 45, pp. 227-8.

not contrary to the present rules, merely because the area is not a continental shelf in the geological sense.¹¹⁹

The Commission further stated that;

Noting that it was departing from the strictly geological concept of the term, inter alia, in view of the inclusion of exploitable areas beyond the depth of 200 meters, the Commission considered the possibility of adopting a term other than "continental shelf." It considered whether it would not be better, in conformity with the usage employed in certain scientific works and also in some national laws and international instruments, to call these regions "submarine areas." The majority of the Commission decided to retain the term "continental shelf" because it is in current use.¹²⁰

In regard to the intention of the delegates, their desire to arrive at the definition of the amount of submarine area that should appertain to a coastal state based on other than geological terms is quite clear. The preparatory article, "Scientific Considerations Relating to the Continental Shelf,"¹²¹ pointed out the impossibility, from even a geologist's point of view, of arriving at any concise, simple method of using any physical definition of the continental shelf. The shelves of the world are too varied, with too many individual peculiarities. The ambiguity of using both an exploitability and a geological criterion was demonstrated to the Committee by Mr. Patey of France. He stated that it would be imprecise,

¹¹⁹Whiteman, op. cit., p. 831.

¹²⁰Ibid., pp. 831-32.

¹²¹A/Conf. 13/37, Vol. I, p. 39.

because it would not be clear whether all the sea bed and subsoil below it off the coast of a given state which could be exploited by mankind as a whole should be taken into account, or only that part which the coastal state itself was able to exploit. It would be variable, because the areas concerned would doubtless increase in extent with further technical progress, and it was plain that such progress would materialize. It was dangerous practice to lay down rules which would soon stand in need of modification If Article 67 (the definition of the continental shelf) were adopted as it stood, only the provision regarding possible exploitation would have any real effect.¹²²

Mr. Rubio of Panama proposed an amendment to Article 67 which would,

alter the definition of the continental shelf as proposed from a juridical definition to a scientific definition. Distinctions should be drawn between the continental shelf, the continental slope, and the continental terrace. In its amendment the delegation endeavored to mention specifically the submarine gorges, valleys, depressions, and ravines of the continental slope. Adoption of the amendment would be the wisest course for deletion of all numerical limits from the definition and fixing a geological limitation, would clearly mark the edge of the oceanic depths.¹²³

At least ten delegates expressed similar doubts or open opposition to Article 67 on these grounds. However the convention, cognizant of Mr. Patey's warning, rejected Panama's amendment and accepted the definition as it stood. It can be concluded from the convention, as Mr. Amador concludes today, that there exists somewhere in the center of the ocean a series of median lines which separate the submarine areas of coastal states bordering on that ocean.¹²⁴

¹²²A/Conf. 13/42, Vol. IV, p. 31, 32.

¹²³A/Conf. 13/42, Vol. IV, p. 33.

¹²⁴Amador, op. cit.; p. 95.

Perhaps more significant than the intentions or intentional oversights of the delegates who drafted the convention is the understanding which the ratifying states had when acceding to the convention. As stated above, the proclamations and treaties of states which would reveal their interpretations as either restrictive or expansive are virtually non-existent. One exception which sheds some light, if not on official United States interpretation, at least on the policy being followed by the operational agencies is a memorandum dated May 5, 1961, to the Director, Bureau of Land Management, Department of the Interior, from the Associate Solicitor, Division of Public Lands, Department of the Interior.¹²⁵ The memorandum passes upon the propriety of leasing, pursuant to the Outer Continental Shelf Lands Act (43 USCA 1331-1343), phosphate deposits located some forty miles off the coast of California.

The author of the memorandum related that the designated area lies in the open sea and between this area and the mainland lies a deep channel in which soundings are at least 600 fathoms; soundings in the designated area range between 43 and 670 fathoms, the greater part of the area being at a depth of far more than 100 fathoms. The question presented by the memorandum is whether there is, in fact, a seaward limit to the applicability of the Outer Continental Shelf Lands Act. After finding that "outer continental shelf" as used in

¹²⁵See Appendix B for the full text of this significant memorandum.

the Act is not a geographic term, but rather "a special statutory definition in order that it may apply to all submerged lands over which the United States has asserted jurisdiction and control seaward of the boundaries of the states," and interpreting Article I of the Convention of the Continental Shelf as giving to the United States "jurisdiction, control, and power of disposition" over an area such as that designated, the memorandum concluded that:

the Act is applicable to all submerged lands seaward of the states' boundaries of which the subsoil and sea bed appertain to the United States and are subject to its jurisdiction and control. Since the United States has now asserted rights to the sea bed and subsoil as far seaward as exploitation is possible, it is clear that the Outer Continental Shelf Lands Act is now applicable to all these areas. There is no question that the area designated falls within the scope of the definition in the Convention and is, therefore, subject to leasing under the Act.

The author's statements could be interpreted to mean that the United States could exercise jurisdiction and control over the sea bed and subsoil lying beyond the continental shelf when such area becomes susceptible to exploitation. No where in the memorandum does the author limit the jurisdiction of the Outer Continental Shelf Lands Act to the furthestmost edge of the geographic continental shelf. To wit, when using the phrase "as far seaward as exploitation is possible" the author does not join with it a limit other than that of exploitability. On the contrary, when considering the continental slope as the outer limit of jurisdiction to be exercised by the United States the author states, after referring to the irregularities of the submarine terrain, that

"this does not therefore appear to be a satisfactory test of the seaward limit of the continental shelf." These statements indicate that the author does not accept the edge of the continental slope as the outer limit of United States jurisdiction.

Whatever errors of interpretation may be found in the restrictivist or expansionist analyses, the real error lies within the convention itself for providing inherently vague guidelines that permit the growth of such mutually contradictory interpretations. An approach to the resources of the deep ocean floor based on either of these two interpretations is inadequate and carries with it promise of future difficulty.

The restrictivist analysis fails to take into account the need of mankind for the resources of the deep ocean and the intention of states to provide for this need by denying to others the territory which comes under its particular jurisdiction and control. It effectively removes any control over exploitive activity. Without this control by the state, either of two occurrences are likely. First, enterprise would refuse to risk the investment necessary for mineral development, for in order to make real estate valuable and desirable to the entrepreneur it must have ascertainable boundaries and be subject to clear and exclusive rights of occupancy.¹²⁶ Some provision must be made to protect the

¹²⁶Northcutt Ely, "The Laws Governing Exploitation of the Minerals Beneath the Sea." Transactions MTS Convention, June 27, 1966, p. 378.

investment made by the exploitive industry. Although application for a patent to the exploitation procedure may be obtained in any country that provided for patent protection, an inherent risk remains. Since the material contained in the patent would be open to public scrutiny, such information could fall into the hands of nationals from countries in which a patent right is not available. Therefore the protection sought by legal means would be nullified. If this lack of protection is combined with the fact that such persons could subsequently exploit a site in proximity to the patent holder's activity this would result in competition from one who neither had to go through the expense of developing his own exploitation procedure nor of locating the exploitation site.¹²⁷ The second event likely to occur would be the development of activity detrimental to the general welfare. Without considering the myriad of possibilities of conflicting claims which could generate international crises of a high order, there is the problem of conflict of usage between fish trawlers, oil pipelines, and mineral dredges. In addition, pollution problems and interference with shipping lanes would assuredly arise.¹²⁸

Acceptance of the expansive view provides no answer for similarly serious difficulties arising from the practical application of the interpretation of the convention which

¹²⁷Tubman, op. cit., p. 391.

¹²⁸Ibid.

gives states offshore territory without limit. For example, if a stranger were to find a method for drilling at great depths at a distance of hundreds of miles from the nearest coast line then he would automatically establish ex post facto the exclusive jurisdiction of a coastal state which might never have been capable of the exploitation itself, had not licensed the exploitation, and,, indeed, might never have heard about it in advance. The state would then acquire sovereign powers to prohibit it, or police its operations, to collect taxes and royalties, and to control disposition of production. Would the state be bound to maintain order in this new outpost of its sovereignty and protect it from other powers? If the extreme convention interpretation is accepted and an attempt made to actually establish a median line in oceans the boundary language in the convention makes borders difficult if not impossible to fix. The boundary between nations projected outward is not a straight line like a meridian of longitude. If the coast is sinuous and curved, jagged or indented, the seaward boundary which must follow it will be similarly configured. The art of navigation and oceanic position fixing, despite recent achievements, has not progressed to the point where it is possible to fix such boundaries with the necessary accuracy.

Despite the wording of the law, at some great depth, some great distance from land, the continental shelf must be presumed to end, even as a legal fiction. When that point is reached the land beyond it is not under the jurisdiction of

any coastal state, outside the scope of any treaty, ungoverned by any juridical precedent.

CHAPTER VI

SUGGESTED SOLUTIONS FOR THE PROBLEM OF THE DEEP SEA BOTTOM

The suggestion has been made that the dilemma of the resources of the deep sea lands could be approached in several ways. An examination of these proposals is necessary in order to determine whether or not they will clarify the legal status and establish a climate conducive to orderly exploitation.

United Nations Control

The White House Conference on International Co-operation published a report in May, 1966, in which it recommended the establishment of a specialized agency of the United Nations for international marine resources.¹²⁹ This agency would be given responsibility for the management of marine resources for the purposes of reducing the potentiality of conflict, preventing the waste of capital and labor, and insuring the rational and efficient exploitation of mineral resources. The agency would have the responsibility for leasing inclusive rights to mine the nodules and other minerals on and under the ocean floor. It would have the power

¹²⁹White House Conference on International Co-operation National Citizens Commission Report of the Committee on Natural Resources, Conservation, and Development. Document 8, (Final Draft).

to promote the development of new techniques and it should have the power to guide the use of the seas in order to prevent excessive competition and depletion of the resources. In addition, the fees collected from exploitation would provide an income which should enable the United Nations to operate independently of member contributions.

In the text of the report the Committee stated that "the possibility of exploiting the resources raises two problems: the efficient and orderly exploitation of the nodules, and the distribution or sharing of the mining rights." Producers, it explains, must have exclusive mining rights to areas that are sufficiently large to permit them to operate economically and without fear of congestion or interference. It concludes, therefore, that

if rights are to be granted for resources that are the common property of the World Community then decisions on the allocation of these rights or on methods of acquisition must be made within the framework of international law. A specialized agency of the United Nations would be the most appropriate body for administering the distribution of exclusive mining rights.¹³⁰

It is interesting to note that only one of the forty-two members of the Commission and consultants was a lawyer.¹³¹ It is of interest also to note the legal assumption upon which the logic of their proposal for United Nations control was based. They state in the report that "international marine resources are the common property of the world and not

¹³⁰White House Conference, op. cit., p. 7.

¹³¹Ralph W. Johnson, Professor of Law, University of Washington.

under the jurisdiction of any single nation." And again that, "these resources - fish, and minerals beyond the continental shelves - are clearly outside national jurisdictions." As shown above, this fact is far from clear to a number of lawyers and nations. The automatic equivalence between the sea bed and the sea itself whereby both are categorized as res communis is, as will be seen, open to serious question.

In addition to the questionable legal basis of this proposal, it has practical operative drawbacks as well.¹³² In the first instance a reorganization would have to take place within the United Nations structure to provide for such a powerful and politically influential body. Secondly, the proposal provides for the exclusion of military usage from this United Nations territory. Not only is this prohibition rather tardy in view of the progress being made at the disarmament conference in Geneva, but also expectations of disarmament of the ocean by decree from a United Nations agency seems quite improbable. Professor Burke takes particular exception to the financial aspect of this suggestion for both its assumption that large sums of money would then become available to the international institution and also that it is desirable to support the United Nations, as presently constituted, in this way.¹³³ In his opinion there is good

¹³²See Padelford, "Financing Peacekeeping Politics and Crisis," International Organization, Vol. IXX, 1965, p. 444.

¹³³Remarks by Professor William T. Burke at the opening session of the Marine Technology Society Convention, June 27, 1966.

reason to doubt that these ocean resources represent a great source of wealth for the United Nations or a special international organization. For the immediate future at least, it is probable that the problems of making ocean mining competitive with conventional land mining will preclude imposing substantial royalties or fees upon these enterprises. Furthermore, Professor Burke reasons, assuming that there might be some, even substantial, income for the international group, the existing political situation in the United Nations suggests that any international arrangement, especially if the United Nations is involved, must insure that the new wealth is expendable only for non-political purposes. The recent dispute over the financing of peacekeeping operations, which is still not satisfactorily resolved, and the continuing disparity in the General Assembly between the voting power of the majority and their control of resources necessary to support the operations which they authorize by their votes are the principal factors leading to this conclusion. It is presently inconceivable that either side in the cold war would acquiesce to a United Nations which has an independent financial source and which can be dominated by a large group of states with little power or wealth of their own. This plan, therefore, suffers a malady common to such utopian approaches to international problems. It lacks both the specifics of strategy and the acknowledgment of obstacles. The plan provides only vague hopes where a clear program of specific, realistic action is needed.

Unilateral Acquisition

An interesting and possibly prophetic proposal on the "exclusive" distribution of the undersea land was made by Professors Clark and Renner of Columbia shortly after the Truman Proclamation on the Continental Shelf.¹³⁴ They proposed that the United States take many of the island possessions of the European Powers as repayment for war debts. Then, since the United States was the world's strongest military power, she could use them as outposts and appropriate all the ocean floor lying between them and the continental mainland. The boundary that they envisioned would run approximately from Attu in the Aleutians through Midway, the Johnston Islands, down the Northwest Christmas Island Ridge and the Marquesas Islands, to the Tia Motu Archipelago, and finally up to San Diego. In the Atlantic it would run from Newfoundland to the Virgin Islands, including the Island of Bermuda. This would result in United States acquisition of approximately one billion square miles of sea bottom with unquestioned rights to the resources they contained.

Thus far nations, particularly the United States, have been reluctant to make such an exclusive claim to such vast territory because their knowledge of the ocean floor has been inadequate. Nations have not been willing to make such an acquisition until they could be more sure of what they were

¹³⁴Clark and Renner, "How the United States Can Acquire a Billion Square Mile Empire," Saturday Evening Post, April 4, 1946.

acquiring. Such a proclamation could, perhaps, annex millions of miles of sea bottom desert, leaving a bountiful area of sea life or minerals nearby to a state more fortunate in the oceanic grab bag.

Although the concept of undersea empire put forth by Clark and Renner in 1946, was never accepted the arguments used to justify the Truman Proclamation could be used easily today to justify similar acquisitions of any amount of under-sea territory desired. By way of an example one might examine the following statement concerning the United States continental shelf policy prepared by the Department of State on July 3, 1945. The words "continental shelf" have been deleted to illustrate how easy it would be to substitute in their place the name of any other desired submarine area and how readily the same argument would apply.

In view of the long range need for new sources of petroleum and other minerals, believed by experts to underlie many parts of the _____, and in view of their opinion that with modern technological progress, utilization is now practicable or will be in the near future, it is desirable to assert our jurisdiction without delay. Recognized and established interest of their conservation and prudent utilization when development is undertaken. Indeed it appears to be a prerequisite for the commencement of explorational operations by private enterprise. In the entire absence of foreign activities exploiting resources of the sea bed and subsoil of _____ off our coasts beyond the territorial waters (or say, continental shelf) the United States as the coastal nation appears to be clearly the logical government to assert and exercise jurisdiction. In the exercise of its rights of self-protection and as a matter of national defense, the United States could not view without serious concern any attempts by a foreign power or the nationals thereof to exploit the resources of _____ at points sufficiently near to impair or endanger the security of the United States unless such activity were undertaken with its approval.

It is believed that international law does not prevent a nation acquiring by occupation or contiguity rights to lands beneath the high seas, provided the freedom of navigation is not impaired. The legal advisor of the Department (Hackworth) has given his approval to the policy.¹³⁵

Wait and See

Commenting on the ambiguity of the standard of exploitability in Public Order of the Ocean, published in 1962, Myers McDougal and William T. Burke concluded that for the foreseeable future this dual standard of exploitability and depth which was put forth in the Convention on the Continental Shelf was entirely adequate for the needs of man. They raised several points in support of this view.¹³⁶

1. The standard of exploitability would encourage exploration and exploitation in that, for a sufficient time, it offers certainty and specification in the identification of those responsible for authorizing and administering access to a particular submarine area.

2. The test of effective exploitation also is essential for the avoidance of disputes for it serves to prevent potential foreign initiative from locating just beyond the boundary of present exclusive control, perhaps to the detriment of the shoreward exploiters. The resulting controversy might strain to the breaking point already tense relationships.

3. Alternative solutions for the establishment of a

¹³⁵Whiteman, op. cit., p. 755.

¹³⁶Myers S. McDougal and William T. Burke, Public Order of the Oceans, pp. 665-666.

specific depth criterion are unsatisfactory. Such a criterion would be impossible, because the disparity of the continental shelves of the world would require that the boundary be most extensive to include all of them and undesirable because it might be interpreted to exclude any exploitation beyond the established limit even when such exploitation becomes possible.

Expressing this same confidence when discussing the problem, Professor William T. Griffin stated in June, 1966, that:

We now have a body of formulated rules of national and international law sufficient to provide a reasonable basis for the solution of these problems of the orderly conduct of ocean activity for the next few years. In the course of time experience will solve some of the present problems, will indicate the need and nature of clarification of others, and will disclose new problems. The lesson of centuries of legal history is that law cannot be prefabricated in abstract codification.¹³⁷

However wise these arguments may have been at the time of the Geneva Conference, they are no longer valid today. First, the vagueness of the location of state sovereignty acts as a deterrent to investment by business interests.¹³⁸ Secondly, the likelihood of disputes arising from opposite or adjacent countries, particularly insular nations, is increased as these questions of median lines and exploitation

¹³⁷William L. Griffin, "Development of Law for Ocean Activities," Transactions MTS Conference, p. 356.

¹³⁸Weber Alban, "Our Newest Frontier: the Sea Bottom, Some Legal Aspects of the Continental Shelf Status," Transactions MTS Conference, p. 405.

potential arise when a valuable resource such as oil is discovered. One need only consider the vast oil reserve believed to be under the North Sea. Companies are refusing to spend the four to ten million necessary dollars to drill a well in portions of the sea where the coastal control is in dispute because of a difference of opinion as to the location of the median line between Norway and England.¹³⁹ Finally, the exploitability criterion has greater defects when compared with alternative methods at the present state of technological advance. Other laws can be developed which are based on principles of custom and equity which are more beneficial to the common welfare than that body which presently exists. The time to act is now, not in the next five or ten years when the disputes have arisen, states have become rigid in their attitudes, and legal formulation by accommodation is impossible - as is currently the case in the fisheries conservation disputes.

¹³⁹Paper presented by L.E. Kust, Vice President of Westinghouse Electric Corporation, "Risk Incentives for Ocean Exploitation," Second General Session, MTS Convention, June, 1966.

CHAPTER VII

A PROPOSAL FOR DEVELOPMENT OF THE LAW

In order to build a law which is not only realistic and acceptable in terms of existing technological developments but which also promotes the common good, one must consider the requirements of the exploiting industry, the compatible or conflicting legal needs of other users of the deep sea bottom, the inclusive interest of the world community, and the principles and precedents of existing law which can be applied.

Legal Needs of the Exploitive Industry

Several basic elements of a favorable legal climate must be developed before industry can be expected to undertake the risks of undersea mining. The first of these elements is determination of which sovereign has legal competence to authorize and regulate the mining of materials. The lack of certainty existent under present law was discussed above. A corollary to this element is the assurance that the right to develop a mineral will be given to the discoverer. Without such assurance, industry sponsored exploitation will surely lag.¹⁴⁰

¹⁴⁰Paper presented by Dr. Walter R. Hubbard, Jr., Director U.S. Bureau of Mines, Session A2, MTS Convention, June 1966.

A second basic element is that industry must have sufficient tenure after discovery to provide an opportunity to recoup its investment with a reasonable chance for profit. This element necessarily implies the right to develop mineral reserves. The time lag between the discovery of a deposit on land and the exploitation of the deposit on a profit making basis is thirty years. Thirty years of stable government, taxes, rights, and policy. The exact method of conferring these rights is, of course, not of supreme importance here; the key must be certainty of rights and certainty of obligation, whether by lease or other means. For instance, millions of dollars have been invested by the oil industry on the continental shelf on the mere strength of leasehold estates.¹⁴¹

A third basic element which has an economic root is that payments for the right to exploit continental shelf materials must be readily measurable and reasonably related to the risks and investment required in undersea mining. If the payment is indefinite or exorbitant in relation to these factors industry can be expected to direct its efforts toward more orthodox and less hazardous enterprises.¹⁴²

A fourth basic legal element is reasonable certainty

¹⁴¹Paper presented by Chester O. Ensign, Jr., Chief Geologist, Copper Range Exploration Company, "Economic Climate Needed to Make Undersea Mining Attractive to Industry," Session A-2, MTS Convention, June, 1966.

¹⁴²Ibid.

of industry's detailed responsibility to operate in conformity with the other laws of the sea. For example, pollution which might endanger some living resource of the sea.

Another question is whether or not an industrial operator must pay for the relocation of a submarine cable where that relocation is reasonably necessary or convenient for the purposes of mineral exploitation. What assurance will the operator be given that the government will require such relocation if necessary to the mineral operation. "Unjustifiable" interference with navigation, fishing, and conservation of living resources is forbidden. How will this be determined, what are the justifiable interferences that will be permitted? All this must be spelled out in arrangements between government and industry or industry participation may well prove to be only a pious hope.¹⁴³

Finally, industry must have assurance of reasonable rights to the continuous use of ports, the territorial sea, and international waters. If operations can be shut down for national defense reasons, for example, for how long and under what conditions can this be done?¹⁴⁴

The initial step in meeting these requirements is the establishment of state jurisdiction and control by the industry's parent nation over the area to be exploited. This must be followed by the development of domestic laws which

¹⁴³E.F. Bennet, "Legal Climate for Undersea Mining," Transactions, MTS Convention, June, 1966.

¹⁴⁴Ibid., p. 210.

will fulfill the particular requirements of both the nation and the exploiter. The industrial developer will want jurisdiction and control over the area he is exploiting exercised by his native state so he can exert domestic influence to obtain suitable development of the catalogued elements. Likewise, the native state has an equal interest in providing such jurisdiction and control in order to foster its own economy and protect its citizens. Together these provide a strong argument for the extension of exclusive sovereign rights over the sea bed and subsoil.

Legal Needs of Other Sea Bed Users

A look at two other potential uses to which the ocean floor may be put will show whether these operations strengthen or weaken the needs of the mining industry for extension of state sovereignty.

The most significant, of course, is military application, a category which includes a considerable range of operations with varying demands regarding the kind of state authority required vis-a-vis other participants in ocean use. The military potential of sea mounts could extend to the emplacement of weapons systems or equipment indispensable to the operations of systems located elsewhere including the waters surrounding the base. Other uses would appear to be considerably less strategic in nature such as the installation of research for direct military benefit, and the construction of shelters and navigation equipment. Still other military applications might be the operation of repair

facilities and supply depots. Strategically located sea mounts could be useful in missile and space operations.¹⁴⁵

The second major user of the ocean floor is the scientific community. Scientific research could be promoted on sea mounts in a number of productive ways because of the unique conditions there. The water serves as a barrier to break ground radiation. Experiments in radiology, genetics, and contamination could be conducted without heavily shielded laboratories. The depth of these sea mounts permits emplacement of remote data collection systems in a safe location beneath the turbulent waters and currents which wreak havoc with research bouys. One commentator believes that:

geophysicists and oceanographers would have a stable, quiet platform from which to conduct long term investigations in marine biology and no doubt numerous other disciplines could be pursued effectively from stations on sea mounts.¹⁴⁶

The extent of claim to exclusive use for accomplishment of these activities varies greatly. Certain of the

¹⁴⁵Remarks of Dr. William A. Nieremberg, Director, Scripps Institute of Oceanography, Third General Session, MTS Convention, June, 1966.

¹⁴⁶Most writers holding this view state it as a matter of fact feeling no need for explanation or defense. Dr. William R. Chapman, for example, stated in a paper presented to Congress that "our whole land society, government, and institutions is based predominantly upon private or at least governmental ownership of area and resources. From this has built the prudent husbanding of property and resources by the individual or government to increase their economic yield or the social satisfaction to be derived from them. All of this is changed in the ocean. Under existing international law 70 per cent of the earth's surface belongs to everybody. This applies to the area, to the contained resources, and to the bottom." (Hearings N.O.P.L., p. 417)

military uses could very well entail the claim to subject an area to the most comprehensive and exclusive control a state could exert. Thus, for the most strategic uses, encompassing at least weapons systems or associated equipment, it is conceivable that states would regard it as important to occupy the area and to treat it for all practical purposes as part of its national territory. Such treatment would embrace the exclusion of non-national vehicles either from the immediate area or, perhaps, from access to a surrounding region suitable for surveillance. The exclusion could also possibly extend to the surface waters. Other military uses might be regarded as less critical and necessary protection might be secured by lesser assertions of authority.

General scientific research would appear to generate claims to exclusive authority in terms of the kinds of research conducted. Some types might demand quiet and isolation, requiring extensive assertion of authority, while others might not.

In summary, one can readily see that the other two principal uses to which the ocean floor may soon be put reinforce the movement for exclusive sovereign control.

Freedom of the Sea as a Source of Legal Precedent

As stated above, there is no body of law to which one may turn for guidance in determining whether there "shall" or "shall not" be exclusive sovereign control. However, there are two indirect precepts or principles which may be searched for precedent and points of equivalence. The first is the

military uses could very well entail the claim to subject an area to the most comprehensive and exclusive control a state could exert. Thus, for the most strategic uses, encompassing at least weapons systems or associated equipment, it is conceivable that states would regard it as important to occupy the area and to treat it for all practical purposes as part of its national territory. Such treatment would embrace the exclusion of non-national vehicles either from the immediate area or, perhaps, from access to a surrounding region suitable for surveillance. The exclusion could also possibly extend to the surface waters. Other military uses might be regarded as less critical and necessary protection might be secured by lesser assertions of authority.

General scientific research would appear to generate claims to exclusive authority in terms of the kinds of research conducted. Some types might demand quiet and isolation, requiring extensive assertion of authority, while others might not.

In summary, one can readily see that the other two principal uses to which the ocean floor may soon be put reinforce the movement for exclusive sovereign control.

Freedom of the Sea as a Source of Legal Precedent

As stated above, there is no body of law to which one may turn for guidance in determining whether there "shall" or "shall not" be exclusive sovereign control. However, there are two indirect precepts or principles which may be searched for precedent and points of equivalence. The first is the

principle applied to the resources in the sea, namely the "freedom of the seas." This bestows the right on all men to exploit the resources in the sea on an equal basis, with no one nation having the authority to preserve to itself the exclusive right of exploitation or control over even the smallest portion of the high seas. This res communis principle is the guiding legal precept behind the strong inclusivists who propose either United Nations control or equal exploitation of the resources of the sea bottom.¹⁴⁷ This writer, however challenges the automatic equivalence between the sea and the sea bottom in the case of the high seas and, therefore, the application of the law of the former to the latter for the following reasons:

1. In its original conception the principle did not include the sea bottom. Grotius and later proponents did not consider utilization of the sea bottom within the realm of practical possibility. The principle was based on the seemingly inexhaustible nature of the resources in the sea, and the fact that no part of it could be occupied. Now sea bottom occupation has come within the realm of possibility and we have discovered that the supply or deposit of a resource in a particular location is exhaustible. Without these foundation stones, the conclusion that resources should be exploited on an equal basis does not necessarily follow. One need only look at that area for which the principle was

¹⁴⁷Chapman, op. cit., (Hearings N.O.P.L., p. 417)

formulated to see the restrictions increase as the resources decrease. The recent twelve mile fishing limit of the United States is the latest of a long series of similar unilateral extensions.

2. In practice, as land under the sea has become available for exploitation states have not applied the principle of "freedom of the seas" to it. Earliest evidence of such non-application was the Cornwall Submarine Act of 1858.¹⁴⁸ In this regard Lauterpacht states that, "on the part of a great majority of writers there was no disposition to deny the lawfulness of such appropriation."¹⁴⁹ As a rule, writers did not expressly include the possibility of acquisition or assumption of title over the subsoil of the sea as the result or for the purpose of operations commencing from the surface of the high seas. With isolated exceptions they were not prepared to permit any abstract deduction from the principle of the "freedom of the seas" to stand in the way of any future developments. Professor Hyde, writing in 1945, said,

The subsoil appurtenant to the coast of a state and extending therefrom into an area beneath the high seas is doubtless susceptible to acquisition by that state. Accordingly by appropriate processes indicative of the assertion of control, a right of sovereignty therein may be brought into being.¹⁵⁰

The Continental Shelf Convention, of course, confirms this.

¹⁴⁸H. Lauterpacht, "Sovereignty over Submarine Areas," BYIL, Vol. 27 (1950), p. 399.

¹⁴⁹Ibid., p. 400.

¹⁵⁰The Law of the Sea, p. 25.

3. The question remains whether or not there can be any relationship between the principle of "freedom of the seas" as applied to the res communis high seas, and the exploitation of the sea bed and subsoil. The answer seems to be that "freedom of the seas" becomes concerned with the subsoil and the sea bed only when extension of sovereignty over that area causes unreasonable interference with the two essential purposes of the freedom of the seas - free exploitation and free navigation. It is significant that bottom related activity which would result in such interference has been clearly rejected where sovereign extension which has resulted in no such interference has been readily accepted. The wording of Articles III and V of the Convention on the Continental Shelf clearly shows such intentions. Article III states, "the rights of the coastal state over the continental shelf do not effect the legal status of the superjacent waters as high seas, or that of airspace above those waters." Article V, paragraph 1, states that,

the exploration of the continental shelf and the exploitation of its natural resources must not result in any unjustifiable interference with navigation, fishing, or the conservation of the living resources."¹⁵¹

In conclusion, it appears that the relationship between the principle of the "freedom of the seas" and the sea bottom is merely one of "sic utere tuo ut alienum non laedas" and that this principle which assumes its subject the sea

¹⁵¹ Cecil Hurst, "Whose is the Bed of the Sea?" BYIL, Vol. IV, (1923-24), p. 34.

water to be 'res communis' is not directly applicable to a different subject, the subsoil and sea bed of the ocean.

Continental Shelf Doctrine as a Source of Legal Precedent

It has been determined then that the principle of unilateral control or "sovereign rights," not the "freedom of the seas" has been applied to that area of the sea bed that has, because of resource value or technological accessibility, come within the purview of the law. The question is whether unilateral control is equally applicable to that portion of the sea bottom, the deep ocean floor, which is just now coming within this purview, or whether the legal bases for the titles asserted thus far have a unique nature which limits further possible extension.

Early writers, speculating on the basis of the historic examples of sovereign control, the pearl, oyster, and sponge beds, were prepared to recognize title acquired in this sphere by prescription. However, there was some question as to the legality of future appropriations by occupation. Professor Gidel denied the possibility while Sir Cecil Hurst stated that such action "is not inconsistent with the universal right of navigation on the high seas or with the common right of the public to fish in the high seas."¹⁵² A similar view was expressed Oppenheim's International Law,

It is stated therein that although it is traditional to base these cases on the ground of prescription it

¹⁵²H. Lauterpacht, Oppenheim's International Law, 7th ed., 1948, pp. 575-6.

is submitted that it would not be inconsistent with principle and would be more in accord with practice to recognize frankly that as a matter of law, a state may by strictly local occupation acquire sovereignty and property in the surface of the sea bed.¹⁵³

However, it is reasonable to conclude that these writings, expressed prior to the proclamations on the sea bed appropriations which began in 1942, are of limited value for they do not reflect any established pattern of state practice. The establishment of the basis of prescription or, in some cases, occupation for the acquisition of title was a deduction derived from unusual cases of such practice in Ceylon, Madras, Tunis, Bahrein, and possibly some parts of Western Australia. The question of appropriation by virtue of some other title and "other considerations determined by economic necessities and scientific progress was beyond the reach of their vision or interest."¹⁵⁴

Beginning in 1942, when economic necessity and scientific progress became realities and states were goaded into acquiring rights over more of the sea bed, the traditional right of sovereignty continued. However, modified bases for acquisition of that right began to evolve, the most recent expression of this trend being the Geneva Convention on the Continental Shelf. A close look at this development will show those legal bases which have evolved.

Prescription can be readily rejected. No continental

¹⁵³Lauterpacht, op. cit., p. 402.

¹⁵⁴Ibid.

shelf proclamation was made by any nation prior to 1945, the term and concept itself being almost non-existent in the law prior to that time. One need only refer to the Abu Dhabi arbitration decision for confirmation of this.¹⁵⁵

Neither has the other previously discussed legal precept, occupation (or "effective occupation"), been the basis on which title has been established. As some authors point out, the Permanent Court of International Justice in the case of the legal status of Eastern Greenland and the award in the Clipperton Island Case¹⁵⁶ supports the proposition that full effectiveness of occupation is not essential. Lauterpacht goes even further stating that,

Actually these decisions demonstrate more than that. They show that there are situations in which occupation in the normal meaning of the word is not required at all, and in which the conception of occupation is more or less a deceptive figure of speech. If this is so with regard to inhabited or sparsely inhabited territory, it is particularly true in relation to less inhabitable areas such as the sea bed and sub-soil.¹⁵⁷

The International Law Commission put on record in its first report to the General Assembly in 1950, its view that the exercise of control and jurisdiction over the continental shelf "was independent of the concept of occupation."¹⁵⁸ This

¹⁵⁵Professor Dickenson commenting on the latter case in 1933, expressed the opinion that occupation is valueless in determining ownership of such parts of the earth as still remain unclaimed and unexploited. He included "the unexploited lands that lie under the sea." AJIL, Vol. XXVII, (1933), p. 133.

¹⁵⁶Lauterpacht, op. cit., p. 423.

¹⁵⁷Ibid., p. 419. ¹⁵⁸The Law of the Sea, p. 25.

shelf proclamation was made by any nation prior to 1945, the term and concept itself being almost non-existent in the law prior to that time. One need only refer to the Abu Dhabi arbitration decision for confirmation of this.¹⁵⁵

Neither has the other previously discussed legal precept, occupation (or "effective occupation"), been the basis on which title has been established. As some authors point out, the Permanent Court of International Justice in the case of the legal status of Eastern Greenland and the award in the Clipperton Island Case¹⁵⁶ supports the proposition that full effectiveness of occupation is not essential. Lauterpacht goes even further stating that,

Actually these decisions demonstrate more than that. They show that there are situations in which occupation in the normal meaning of the word is not required at all, and in which the conception of occupation is more or less a deceptive figure of speech. If this is so with regard to inhabited or sparsely inhabited territory, it is particularly true in relation to less inhabitable areas such as the sea bed and sub-soil.¹⁵⁷

The International Law Commission put on record in its first report to the General Assembly in 1950, its view that the exercise of control and jurisdiction over the continental shelf "was independent of the concept of occupation."¹⁵⁸ This

¹⁵⁵Professor Dickenson commenting on the latter case in 1933, expressed the opinion that occupation is valueless in determining ownership of such parts of the earth as still remain unclaimed and unexploited. He included "the unexploited lands that lie under the sea." AJIL, Vol. XXVII, (1933), p. 133.

¹⁵⁶Lauterpacht, op. cit., p. 423.

¹⁵⁷Ibid., p. 419. ¹⁵⁸The Law of the Sea, p. 25.

view prevailed right up to final acceptance of the convention in 1958. The convention neither refers to occupation nor intimates in any way that it is a prerequisite to gaining title of the "submarine areas."¹⁵⁹

The question has arisen as to whether "proclamation" of sovereignty may not be a new precept constituting that action necessary to gain title to submarine areas because it was solely by a series of "proclamations" that the continental shelves were appropriated, thereby establishing the pattern of state practice which became the law. This, in the writer's opinion, is an invalid assumption, for a proclamation is only a means by which a title, claimed or acquired, is announced. It is not a source of title or a means of acquiring it. However, it is not unnecessary nor without meaning. A state who makes a claim, regardless how valid, must make that claim known by a formal pronouncement or notification, particularly if it is a novel claim, one not clearly defined in extent, or in possible conflict with other states' claims. These proclamations then were nothing more than declaratory, the title belonging to a state because of some other legal basis.

Contiguity or continuity was clearly one of the principles upon which title to the sea bed and subsoil was first acquired. The early proclamations on the continental shelf show it to be an essential requirement for the legitimization

¹⁵⁹ From the text of the Truman Proclamation on the Continental Shelf, 1945, Whiteman, op. cit., p. 754.

of those claim. The United States spoke of the territory claimed as

an extension of the land mass of the coastal nation and thus naturally appertenant to it. A unity emphasized by the fact that these resources frequently form a seaward extension or pool or a deposit lying within the territory.¹⁶⁰

The Mexican Declaration was more specific,

As is well known, the lands which constitute continental masses do not as a rule rise steeply from the great ocean depths, but rest upon a submarine base called the continental platform. This platform obviously constitutes an integral part of the continental countries.¹⁶¹

The Argentine Declaration of 1946, began by reciting that the submarine platform known also as the submarine plateau or continental shelf, is closely united to the mainland both in a morphological and geological unit with the continent.¹⁶² In these early proclamations there were no additional criteria on which states could base their claims to title other than morphological and geological unity. Had this remained the case, we would be required to say that this was the sole legal basis. Moreover, it would be a legal basis which would, by its nature, have no applicability to those areas that do not form a morphological geological unity, that is the deep sea bottom.

As the law developed and various concepts were studied,

¹⁶⁰Lauterpacht, op. cit., p. 424.

¹⁶¹Ibid., p. 426.

¹⁶²Because the continental shelves are chiefly unexplored or consist of ravines, cuts, mountains, and plateaus. Ibid.

discussed, and codified; it became apparent that the previous strict application of contiguity was impractical¹⁶³ and undesirable.¹⁶⁴ Therefore, it was rejected by the majority of states. In its place was substituted the vague "adjacent area," which bestowed title to the adjacent state regardless of whether there existed any "morphological and geological" continental shelf. While still remotely related to the concept of contiguity, there is considerable difference both in degree of unity and ultimate extension. Under the strict contiguity precept the right to title could be based on substantial, scientifically determinable facts, i.e. the geological nature of the sea bed. Furthermore there existed a positive boundary beyond which title could not be gained i.e. the edge of the continental slope or shelf. These restrictions were removed when the more expansive, less definable, principle of "adjacency" was adopted. Thus, without such restrictions, "adjacency" is directly applicable to the deep ocean bottom beyond the continental shelves, and states can legally assert title to these lands using this principle.

More significant, however, is the fact that in the codification of those principles on which a state bases the

¹⁶³ Because some states had no continental shelf, but still desired sovereignty over the adjacent sea bed.

¹⁶⁴ These factors have been developed from the theme set forth by McDougal and Burke in Public Order of the Oceans, chapter 1, "Community Content and Fundamental Policies," p. 1-88, and "Legal Aspects of Ocean Exploration Status and Outlook," a paper presented at the first general session, MTS Convention, June 1966.

exercise of its sovereign rights over the adjacent submarine areas exploitation, a new method of acquiring title became accepted. In the writer's view, this is a unique and independent principle; it is neither contiguity, prescription, proclamation, conquest, treaty, accretion, nor occupation. Furthermore, it does not require previous occurrence or existence of one of the above for effect. Exploitation, in the words of the convention, is not in a subordinate position to "adjacency." Rather the opposite is true. The sea bottom is not considered adjacent, thereby coming under the sovereign control of a state, until exploitation has occurred. Since exploitation can occur anywhere, at any depth, and is in no way limited by the convention, it becomes a second legally acceptable principle by which state sovereignty can be extended to the sea bed and subsoil. It is directly applicable to the deep sea bottom.

Common Good

We have seen, in this analysis of the development of law for the deep sea resources, several related factors. First, because of the requirements of the exploitive industry single state sovereign control is both needed and to be expected. Secondly, we saw that the other uses to which the ocean may be put will support rather than abate such a trend. Thirdly, in looking at the principles of the law, we found that the principle of "freedom of the seas," which might stand in the way of such a trend toward sovereignty was inapplicable to the sea bottom and, consequently, state

practice has ignored it in that area. Finally, when examining the only existent law which addresses itself to the sea bottom albeit not specifically to the deep sea, we saw that the right to acquire title was upheld and that this title was based on either adjacency, exploitation, or both. These precepts are applicable to any and every portion of all the oceans. Thus states should, can, and will claim sovereign rights over the deep sea resources.

One can not leave the development of the law here, for without restraint, unencumbered exercise of sovereignty would assuredly result in abuses detrimental to the common good of nations. The law must go further and create a framework based on reason and justice within which states may operate. Degrees of utilization and authority should be established in order that a particular claim could be considered lawful in the light of all relevant factors. Several such factors are discussed as follows:¹⁶⁵

First, the objectives sought by the state claiming title should have major if not determinative bearing on the permissibility of acquisitions. Many organizations including nations, private associations, and individuals may share certain objectives which may be pursued by unilateral claim to submarine areas. An example would be an undersea

¹⁶⁵ Expression of the opposite legal positions, supporting each of these views may be found in the books by Garcia Amador of Cuba, The Exploitation and Conservation of the Resources of the Sea, and by Shigeru Oda, International Control of Sea Resources.

laboratory or oceanographic research facility. The benefit from such use does not pertain exclusively to the claimant state, but to mankind in general. For this reason, the degree of exclusiveness or inclusiveness of the specific objectives should be carefully weighed in assessing the reasonableness of a claim.

Secondly, specific selection of sites could be influenced by the remoteness of a region from conflicting uses, and by the relative proximity of various submarine regions to the territory of the claimant state. Since there is such a wide range of possible sites, selection of a location which is widely separated from particular non-claimant states might be considered important. Another factor relevant to the legality of a claim might be the degree of provocation implied in the selection of a site adjacent to another state.

Thirdly, the extent of the area concerned would, of course, be a major factor to be considered. Claims to small surface areas might be looked on more favorably than a claim to a very large part of the ocean floor, especially if superjacent water uses were wholly or partially curtailed thereby.

Fourthly, a claim may vary a great deal in terms of its duration, from an assertion of permanent authority to one of control for only a matter of days or weeks. In the early stages of ocean exploitation, states probably will not favor claims of indefinite duration for they could entail undesirable interference with uses presently unforeseen. However, when all other factors are taken into consideration, even

permanent claims may be adjudged reasonable.

The last factor of prime importance is the kind and degree of interference with other states explicitly or implicitly demanded by a particular claim. Claims to exclusive control which will displace only hypothetical usages will cause fewer difficulties than those which involve actual interference. The greater the infringement on other productive activities, the greater the task of the claimant state to justify the reasonableness of its claim. One of the reasons for concluding that it is lawful to acquire regions of the ocean floor is that little interference with the other uses of the ocean is likely to occur.

These factors must be applied to claims on an individual basis. However, it is difficult if not impossible to formulate anything but abstract generalizations in the absence of concrete claims. In the face of such impending activity as sea mount settlement, mineral dredging, and oil drilling a great need exists for discussion and examination of factors in order to provide for orderly progress. In conclusion, it must be re-emphasized that there is great benefit to be gained from the ocean floor and that states are beginning to awaken to the existence of these gains. The law must similarly awaken to the reality of this situation. It must turn away from the futile discussion of legality or illegality of sovereignty per se over the sea bed to the vitally important examination of methods and criteria for the just and reasonable acquisition of title.

PART III

THE REGIME FOR EXPLOITATION OF SEA RESOURCES -

MEETING THE CHALLENGE

In recent years, the law of the sea has received more international attention than any other area of international law. However, it has been shown in Parts I and II how, after many years of discussion, two major international conventions, and a host of regional conferences, the law governing the exploitation of resources of the sea, the continental shelf, and the deep sea bottom remains ambiguous, contradictory, or virtually non-existent. In general the reaction of legal observers has been to criticize the shortsightedness of the delegates to the Geneva Conference. The most frequently mentioned remedy is to hold another Geneva Conference in the immediate future to clarify the situation. Before arriving at such a conclusion, however, one should attempt to discover what reasons lie behind the failure of the law in these specific areas. Once these obstacles have been identified and examined, one may find a more effective strategy with which to approach improvement in the law.

CHAPTER VIII

POLITICAL OBSTACLES IN THE DEVELOPMENT OF THE LAW

The complex relationship between law and politics, in general, is too lengthy a subject for discussion here. Suffice it to say that political considerations have always played a role in the development of the law, and nations' views on the content and utility of international law have been similarly influenced by political interests. A barrier to the development and codification of the law is raised when nations have conflicting politically influenced objectives for the law which can not be resolved. Such an impasse is re-enforced as the importance of the political objectives and degree of political influence increases, until a point is reached either where no consensus at all can be achieved or where the law which does result is a meaningless or contradictory compromise. Such a situation nearly existed during the two conferences held at Geneva in 1958, and 1960. Examination of the politically toned points of conflict which occurred shows how their irresolution affected the formulation of the law. These differences did not disappear at the close of the conference. They stand today as the major obstacles in the path of the achievement of consensus.

The particular developments at Geneva demonstrate an interesting paradox in the attitudes of states. Nations

recognize extreme sovereignty as a barrier to the maintenance of peace and the expansion of international co-operation, yet, in the realm of the sea they are extending their sovereignty in a bold and positive manner. The power of national self-interest is, of course, the most significant single explanatory factor for this. Poor coastal states claim vast areas with unlimited sovereignty, hoping thereby to better their lot. Nations such as Japan support a rigid notion of freedom of the seas to permit effective and far-reaching fishing fleets a maximum advantage.¹⁶⁶ The United States, with its advanced technology and strong Navy, will claim more and more undersea territory as it becomes commercially advantageous. The sea is an easy mark for the nation with a "something for nothing" attitude.

Negotiations at Geneva

From the first the states at Geneva split themselves into groups based on political attitudes rather than on common legal heritage or international law tradition. A division occurred in which "have not" states were generally aligned against the "haves." The dissatisfied "have not" faction was composed of states that are associated in the United Nations with either the Asian-African, Arab, and Latin American caucusing groups or with the anti-colonial common interest group. These constituted fifty-four of the eighty-six states

¹⁶⁶United Nations Conference, A/Conf. 13/42, 19th Meeting, par. 33.

represented at the first conference and fifty-six of the eighty-eight at the second. The second faction included all those states present that had a Western European tradition. The twenty-three states in this group came from the Western European, Benelux, European Community, and Scandinavian caucusing groups and the NATO common interest group. Usually voting with them were the "white commonwealth" states, five European states not represented in the General Assembly, Israel, and the five United States cold war allies - Japan, Pakistan, and the Republics of China, Korea, and Vietnam.

The lines of conflict were drawn early over the role that politics was to play in the development of the law. The dissatisfied states viewed the conduct of the conference itself as political in nature. They used methods such as bloc organization, bloc voting, bloc sponsored proposals, bloc sponsored candidates for the elective offices of the conference, and bloc attempts to manipulate the rules of procedure. The dissatisfied states also acted on the assumption that the subject to be dealt with in the conference was to be political. Frequent reference was made to the General Assembly resolution that stated, "(the conference) should take into account not only the legal but also the technical, biological, economic, and political aspects of the problem."¹⁶⁷ It is evident from the statements and actions of the dissatisfied states that they took this to mean that they had liberty to fight

¹⁶⁷United Nations Conference, A/Conf. 13/42, 11th Meeting, par. 14.

for their own best interests.

A statement by the Vietnamese delegate, Mr. Buukinh, in a debate on the continental shelf clearly demonstrates this attitude. He stated that his "delegation would prefer to see the criterion of depth alone retained particularly as the waters off its own shores were relatively shallow and did not reach a depth of 200 meters for more than 200 miles."¹⁶⁸ In discussing a Canadian proposal on reservations to any convention signed as a result of the conference, Mr. Gomez Robledo, the Mexican delegate, said:

Representatives wishing to permit reservations had been reproached for defending national interests; but they were attending the conference for that very purpose.¹⁶⁹

Mr. Caabasi, the Lybian delegate, discussing a United States proposal on the breadth of the territorial sea, remarked that his delegation "had voted against the United States proposal because it contained provisions which were contrary to his country's interests."¹⁷⁰

A brief examination of the history of the United States proposal at the second conference for a six mile territorial sea and an additional six mile fishing zone clearly illustrates the political climate and its detrimental effect on the orderly development of a regime for the exploitation of

¹⁶⁸United Nations Conference, A/Conf. 13/38, 9th Plenary Meeting, par. 34.

¹⁶⁹Ibid., 14th Plenary Meeting, par. 66.

¹⁷⁰This account was given the writer by the Hon. Arthur H. Dean on June 28, 1966.

sea resources. At the conference, the diplomatic forces of the United States and the Soviet Union were strongly opposed. The United States, because of her naval and merchant commitments and power, was against an extension of the territorial sea to twelve miles. Such an extension would jeopardize free passage through 116 critical straits and passages. The Soviets, on the other hand, wanted the twelve mile limit but realized few nations would agree. However, Russia felt that if she were to prevent the United States and its allies from achieving agreement to a three mile limit for the territorial sea she could establish the framework which might permit the establishment of a twelve mile limit at a later date. At all times it was desperately uncertain as to whether the United States could obtain a two-thirds vote for a territorial sea of less than twelve miles, or whether Russia and its allies could obtain a blocking third of the votes and prevent agreement.

In her struggle for votes, the United States compromised until she was prepared to accept a six plus six formula (incidentally, blocking fifty-two international straits). After weeks of difficult negotiation just enough support was gained to guarantee adoption. On the night before the day of the voting the status changed. As the United States representative, Hon. Arthur Dean, recounts it the delegate from Ecuador, who had agreed to vote for the resolution, came to see him and stated that he could not vote for the resolution unless certain United States private monetary claims against

the Ecuador Government were dropped. Mr. Dean had no power to oblige his request. The following day, Ecuador and her bloc, Peru and Chile, which had previously agreed to support the six plus six formula voted against it. The formula was defeated by one vote. The effect of this political situation is obvious. A clearly delineated area for the establishment of a fishing zone remains undetermined today, opening the way for a variety of different conflicting national claims to exclusive fishing rights.¹⁷¹

A second major area of conflict between the satisfied and dissatisfied nations was the role that law was to play in the development of political interests. As Dr. Jorge Castaneda of Mexico pointed out:

Rigid adherence to the traditional rules of international law could prove disastrous to all concerned, for the traditional rules on the regime of the sea had been created by the great powers for their own purposes before many major problems had arisen and before the birth of the new states which now form the majority.¹⁷²

This theme runs throughout the speeches by delegates of many dissatisfied states; for example, Mr. Ba Han of Burma:

In the past, international law had been a body of rules and usages adopted by powerful states. However, the international situation had changed and new sovereign independent states had emerged, keenly conscious of their liberty.¹⁷³

¹⁷¹United Nations Conference, A/Conf. 13/41, 13th Meeting, par. 22.

¹⁷²Ibid., 4th Meeting, par. 6.

¹⁷³Ibid., 5th Meeting, par. 13.

Mr. Ulloa Sotomayor of Peru;

Rules of international law had sometimes been unilaterally created in the interests of Great Powers, it was therefore reasonable for certain rules of law to be initiated by small states in their legitimate interests It was inadmissible that a sort of colonialism of the high seas should be allowed in the name of freedom of the seas.¹⁷⁴

Mr. Diallo of Guinea;

With regard to "historic rights" the concept was nothing other than a manifestation of the rights of the strongest and a vestige of colonialism which (Guinea) would oppose in all its forms. To perpetuate these rights would be a grave injustice to the young states that were struggling not only for political but also for economic independence.¹⁷⁵

In fact, the dissatisfied states denied the entire history and body of international law. The statement of Mr. Melo Lecaros of Chile is typical;

The rise and development of the law of the sea had been prompted by one single factor: interest. Political or economic interest had always prevailed in defining the law of the sea through the centuries. Grotius had not argued for the freedom of the seas simply as an intellectual concept, but to defend the interests of the Dutch East India Company. Selden's sole aim in refuting Grotius had been to defend England's interest. Things had changed very greatly since that time. The rule of law had been extended, but it was impossible to overlook the fact that the reason for the law was interest.¹⁷⁶

Furthermore, the dissatisfied states did not consider that any law created before their independence was binding upon them. Mr. Bocobo of the Philippines commented that "the

¹⁷⁴United Nations Conference, A/Conf. 19/8, 18th Meeting, par. 6.

¹⁷⁵Ibid., 14th Meeting, par. 13-14.

¹⁷⁶A/Conf. 13/39, 50th Meeting, par. 1.

newer countries valued their freedom above all else and refused to accept certain rules of international law evolved before they had attained statehood."¹⁷⁷ Similarly, Mr. Loutfi of the United Arab Republic remarked, that,

the majority of the new countries that have gained their independence since (the Hague Conference of 1930) have adopted a limit in excess of three miles. The argument that the three mile rule constituted a principle of international law was thus devoid of substance.¹⁷⁸

And Mr. Ba Han of Burma said that he:

.... could not accept the suggestion that abandonment of the three mile rule was a concession. That alleged rule had been established by others at a time when Burma, for one, was completely helpless under foreign rule.¹⁷⁹

The keynote was change for the sake of change and rejection per se of any notion of common interest with the satisfied states who formulated the law. Equivalency was drawn between international law and the law used to impose foreign rule. The words of Mr. Quarshie of Ghana clearly bring this out:

The African states which had seen their continent divided among the great powers without the consent of the populations concerned, found it difficult to understand the moral arguments now advanced against the division of the sea.¹⁸⁰

The dissatisfied states used "doctrine" and "principle," not as a basis for consistent legal philosophy but

¹⁷⁷United Nations Conference, A/Conf. 13/39, 21st Meeting, par. 4.

¹⁷⁸A/Conf. 13/38, 14th Plenary Meeting, par. 51.

¹⁷⁹Ibid., 21st Plenary Meeting, par. 21.

¹⁸⁰Robert L. Fridham, "Negotiating International Law," a Case Study, World Politics, Vol. 18, October, 1965, p. 29.

opportunistically to gain their own political and economic ends. The result was absurd inconsistencies in their position on sovereignty. As Mr. Robert Friedham points out,¹⁸¹ they were concerned with the preservation of their own sovereignty even at the risk of impinging upon the rights of other states. Afghanistan, Bolivia, Ghana, Indonesia, Laos, Nepal, Paraguay, Saudi Arabia, Tunisia, and the United Arab Republic, all ardent supporters of an absolute theory of state sovereignty, were able to introduce, without a qualm, a proposal that would give a landlocked state an absolute right of transit across the territory of a coastal state, thereby possibly impairing the sovereignty of the latter. India, a leading advocate of the sovereignty of the coastal state over its continental shelf, making no attempt to explain away the seeming inconsistency of her position, introduced a proposal that would prevent the "sovereign" coastal state from building military bases or installations on the continental shelf. Thus sovereignty was not treated as a juridical idea to be developed so that the same legal rules would apply to all states equally. Instead, it was appropriated by the dissatisfied as a means of maintaining tactical freedom.

There are several corollary characteristics of this attitude which made communication with the more legally oriented states difficult and which had an unsettling effect on the development of the law of the sea as it affects

¹⁸¹Friedham, op. cit.

exploitation of resources. The dissatisfied states displayed great distrust of the "expert." He was associated with the colonial powers and the West and, therefore, was feared and resented. Mr. Quarshie of Ghana typified this attitude when he said that:

Ghana feared the exploitation of its fishing resources and threats to its security; it sought a solution which would guarantee it a maximum freedom from exploitation and threats. Its fears could not be allayed by exhibitions of technical knowledge or outright dismissal of its views. In consultation, the main point often lay less in the validity of the argument itself than in the reaction to that argument.¹⁸²

There was also a reluctance on the part of the dissatisfied states to commit themselves to legal details on the exercise of rights and duties. Such legal formality was considered suspect; vague general statements were preferred. As a result, many provisions sponsored by and embodied in the convention served only to accentuate the disagreements.¹⁸³

The dissatisfied states were not alone in their short-sightedness and faulty perception. The satisfied states were unable to convince the dissatisfied nations that measures under discussion protected their interests as well as those of the satisfied states. Furthermore, in many cases the satisfied states acted as if they did not understand that the political process by which substantial questions are negotiated can in itself often greatly influence the results. Too

¹⁸²United Nations Conference, A/Conf. 19/1, 25th Meeting, par. 22.

¹⁸³See, for example, A/Conf. 13/38, 9th Plenary Meeting, par. 60.

often they would not concede any necessary relationship between law and politics. Professor Paul de la Pradelle, the Monacan delegate said in this regard, "It was difficult but necessary to disentangle the law of the sea from the accretions imposed by national sovereignty."¹⁸⁴ The satisfied states were bound by a rather inflexible legalism which impeded progress. For example, Mr. Sture Petren, the Swedish delegate, emphasized:

the difference between the "progressive development" of international law and its "codification." In practice, the development of law and its codification could not easily be separated ... Any conventions which might be drafted by the conference whether they related to the codification or the development of the law, would therefore be of a mixed nature, containing both old rules of law and new ones. These two kinds of law had not at all the same legal effect. The old rules if they were based on customary law, bound all mankind independently of the new conventions to be concluded, whereas the new rules, which would come into being only through the conventions, would bind only those states which signed and ratified those conventions. Other states would not be bound to recognize or observe them. The Swedish delegation therefore felt that the Conference should proceed with caution, and should not depart too radically from existing law.¹⁸⁵

Dr. Max Sorensen of Denmark felt that:

.... a trend which weakened rather than strengthened the authority of the international law of the sea should be halted, and Denmark would co-operate wholeheartedly with other nations in restoring the authority of the law.¹⁸⁶

Often the more legally oriented states became bogged down in

¹⁸⁴United Nations Conference, A/Conf. 19/8, 23rd Meeting, par. 17.

¹⁸⁵A/Conf. 13/39, 6th Meeting, par. 1-2 as well as par. 24-25 and 18th Meeting, par. 10.

¹⁸⁶Ibid., 4th Meeting, par. 10.

intricate legal proposals, debating the fine points of a word or phrase, or re-arguing past case precedents and writings. This, combined with the tendency to ignore charges that the law was only an expression of their national interest, did nothing to allay the fears and suspicions of the recently initiated states.

Political Reality and Future Conventions

The conclusion from the above analysis is that if this attitude continues there is serious doubt as to the ability of another sea convention in the near future to accomplish anything useful. We must act on the assumption that the pressures and demands of the dissatisfied states, though not completely acceded to, must be acknowledged, and that politics be allowed to play a more significant role. Faced with this reality, and before convening another convention, we must develop an approach to the political problem which is based on lessons learned from the preceeding conferences. W.R. Chapman, an advisor to the United States delegation to both conferences, has pointed out some of these lessons.¹⁸⁷

1) Do not attempt to open up for modification any aspect of the law of the sea without a careful study and estimation of what other aspects will be opened up at the same time based on the interests and views of all other independent sovereign nations, whether friend or foe.

2) Having ascertained as well as possible what other

¹⁸⁷W.R. Chapman, testimony before House Subcommittee on Oceanography (Hearings N.O.P.L.), pp. 338-407.

aspects will be opened up, do not get involved in any international conference on any aspect of the subject until all aspects which may be opened up have been examined from the standpoint not only of what will be gained from a favorable vote, but what will be lost from an unfavorable one, and also of what compromise may be necessary during the course of negotiations.

In order to win a vote and an issue in a United Nations Conference it is necessary to get a two-thirds majority vote of those present and voting. On several quite important issues in all four of the conventions of 1958, the United States was required to modify its desired position materially in order to line up enough votes to avoid losing the issue.

3) Only after these evaluations are made is it possible to decide whether or not the United States wishes to re-open the law of the sea controversy or whether it is not best to approach the problem from a different angle. In either case legal, technological, scientific, political, and diplomatic spadework must be done in depth and detail.

CHAPTER IX

A PROGRAM FOR PROGRESS

It may well be concluded from the political realities presented in the previous chapter that an international conference is not the immediate answer to the pressing problems in the international law of ocean exploitation. A more profitable and necessary alternative is available with which to effect real progress. If properly organized and directed, a domestic program can be utilized to accomplish the sorely needed legal, technological, scientific, political, and diplomatic spadework mentioned above. Let us look at what steps have been taken in this direction and what further action is necessary.

Public Law 454

On June 17, 1966, President Lyndon B. Johnson signed into law Senate Bill 944, taking what is one of the most potentially significant steps since the Truman Proclamation on the Continental Shelf in 1945. Entitled the "Marine Resources and Development Act of 1966," this legislation was the culmination of eighteen months of exhaustive study, hearings, and testimony by practically every prominent scientist, military officer, technician, industrialist, legislator and public servant in the field of oceanography.¹⁸⁸ Its policy

¹⁸⁸Testimony of prominent international lawyers was conspicuous in its absence.

and objectives are quoted as follows:

(a) It is hereby declared to be the policy of the United States to develop, encourage, and maintain a co-ordinated, comprehensive, and long range national program in marine science for the benefit of mankind to assist in protection of health and property, enhancement of commerce, transportation, and national security, rehabilitation of our commercial fisheries, and increased utilization of these and other resources.

(b) The marine science activities of the United States should be conducted so as to contribute to the following objectives:

1) The accelerated development of the resources of the marine environment.

2) The expansion of human knowledge of the marine environment.

3) The encouragement of private investment enterprise in exploration, technological development, marine commerce, and economic utilization of the resources of the marine environment.

4) The preservation of the role of the United States as a leader in marine science and resource development.

5) The advancement of education and training in marine science.

6) The development and improvement of the capabilities, performance, use, and efficiency of vehicles, equipment, and instruments for use in exploration, research surveys, the recovery of resources, and the transmission of energy in the marine environment.

7) The effective utilization of the scientific and engineering resources of the nations, with close co-operation among all interested agencies, public and private, in order to avoid unnecessary duplication of effort, facilities, and equipment or waste.¹⁸⁹

The Act provides for a council and a commission to implement these policies. Within eighteen months of formation, the commission is to make an extensive comprehensive report to the council and then be dissolved. The council is then to give advice and assistance to the President. For the

¹⁸⁹89th Congress, 2nd Session, House of Representatives, Report no. 1548, "Marine Resources and Engineering Development Act of 1966," Section II.

purposes of this discussion, we must focus our attention on Section IV, subsection 5, of the bill which holds the key to the necessary legal "program for progress." It states:

(The Council) will undertake a comprehensive study, by contract or otherwise, of the legal problems arising out of the management, use, development, recovery, and control of the resources of the marine environment. 190

In the writer's opinion, for meaningful implementation of this farsighted provision, a "program in ocean resource law" should be initiated and pursued along the following lines:

The Program

The main purpose for implementing this program would be to provide a forum to utilize the top legal scholars, lawyers, scientists, businessmen, and national and international organizations (public and private) to carry on a continuing research analysis and discussion of the interface of the technological, economic, and scientific with the legal aspects of ocean space use. Apart from individual projects, special task forces could be assigned to given problem areas. Through these task forces the program would be in a position to undertake rapidly and competently specific legal studies on request and to correlate and draw up recommendations

¹⁹⁰The history behind this provision is of interest here. The Marine Resources Act of 1966, was an amalgamation of approximately 16 other bills one of which (H.R. 5175) stated "that the United States Coast Guard is authorized and directed to conduct by contract or otherwise, a study of the legal problems arising out of the management, use, and control of the natural resources of the oceans and ocean beds." \$50,000 would have been authorized for the study. The Coast Guard was considered an inappropriate sponsor for such study and H.R. 5175 was denied individual status.

wherever desirable. The program would also serve as a medium for preparation and publication of texts, papers, teaching materials, and symposia. The specific activities the program would undertake are listed as follows:

1. Co-ordination. Co-ordination between the legal field and the scientific, political, and industrial fields is necessary in order to provide the former with guidelines and information, and the latter with sound advice and principle. This is, perhaps, the single most necessary prerequisite for sound legal development. The areas in particular need of co-ordination include the following:

a) Political. There is great need in the legislative branch of the government for sound international legal advice. Congress works in a near vacuum, receiving what legal opinion it does from either State Department briefs or testimony from interested commercial parties.¹⁹¹ On the other hand, the government must provide lawyers with an overall "political theory" for the oceans.¹⁹² National policy not legal opinion is required to insure security and the desire to promote international social welfare in developing the ocean for the common use of mankind. Who shall use the resources and under what constraints? The pressures generated

¹⁹¹Testimony of prominent international lawyers was conspicuous in its absence.

¹⁹²Mr. James W. Oswald of the Underseas Division, Westinghouse Electric Corp., admirably delineated this problem in his paper, "Toward a Political Theory of the Ocean," Transactions MTS Convention, June 1966, p. 358-72.

by the present international coalitions, the nature of nuclear weapons, the competition between and among military and industrial users, and the nature and knowledge of the environment itself make this a difficult question. The answer lies in the establishment of a balance which will prevent the new environment from becoming a sphere of ruthless competition.

On a national, as well as an international level, governments must co-operate to develop a healthy legal environment. For example, our Submerged Lands Act and Outer Continental Shelves Land Act divide the responsibility for establishment of law between the states and the Federal Government. Thus, we have fifty-one different bodies of law governing the exploitation of diverse portions of the ocean bottom. In addition, under Federal law, the discoverer of a mineral deposit in the continental shelf has no preferential rights to its exploitation. The lease will go to the highest bidder; a rule hardly conducive to exploitation.

b) Scientific. Specific information in the scientific fields is vital to the development of the law. The knowledge of the feeding, migration, and reproduction habits of exploitable fisheries stocks is absolutely necessary before it can be determined that a certain type or location of fishing is depleting the fish population. The point of maximum yield must be scientifically determinable before any realistic or just conservation law can be either accepted or enforced.

Providing this raw data to the lawyer is not sufficient to establish a suitable fishing regime. Economic studies

must be made available for consideration. If such factors are ignored a conservation law may be detrimental both to the industry as a whole and to the individual fishermen, as has occurred in the Pacific Halibut Fishery¹⁹³ though that program has been successful in conserving the fish. The significant economic problem of the allocation of higher yields still remains.

Before there can be full development of the law for exploitation of minerals, mineral deposits must be assayed and located, capabilities of the bottom to support exploitation and occupation must be evaluated, and sea bed topography must be known for delimitation of natural boundaries and areas of mutual interest. Typical of the scope of investigation required is that conducted by Battelle Memorial Institute in 1965. This study, commissioned by the Commerce Department, had as its objectives, to identify the economic benefits that can be derived from the present and future survey activities in the continental shelf region and to delineate present and future geographical regions of commercial interest in the continental shelf region. This comprehensive oceanographic project included hydrographic surveys, biological oceanography, geophysical research, physical and

¹⁹³The plea for greater economic and social studies of the effects and necessity of conservation prior to implementation is perhaps one of the most significant observations made by McDougal and Burke in Public Order of the Oceans. For comment and documentation see particularly "Claims to Appropriation and Conservation of Marine Resources," pp. 923-998.

chemical oceanography, and programs in geomagnetism, seismology, geodesy, hydrography, and aeronautical charting.¹⁹⁴

c) Industrial. In order for the lawyer to meet the needs of industry, he must understand the processes industry is using or planning to use in exploitation. Is the mining industry developing a bottom emplaced device, or will it be mobile; how large an area does a petroleum company need for a "set" of well heads, what type of pipelines will they use, and how much pollution or interference will they generate? The detrimental effect of the extended fishing zone on the American tuna industry is an example of the problems that can arise when the law is formed without close co-ordination with the industry concerned. To effectively fish the tuna resources of the Eastern Tropical Pacific, the fishermen must be able to scout for and follow the migrating movements of the tuna. Closure of the seas seriously hampers this mobile international industry. Furthermore, with the present equipment there is little difficulty in determining whether the tuna boats are within three miles of the shore, but considerable navigational difficulties will arise in determining whether the distance is twelve miles or more. In addition, most of the vessels are purse seiners and become practically immobilized after setting their nets; since most tides and

¹⁹⁴See the letter from U.S. Coast and Geodetic Survey to Battelle Memorial Institute dated April 12, 1965, in which these responsibilities are outlined. (Hearings N.O.P.L.), pp. 210-15.

currents drift toward shore, the real limit imposed on the fishermen is far greater than that defined legally. The United States extension of the fishing zone to twelve miles not only re-enforces the extensive Latin American claims thereby restricting tuna operations (six boats were captured on the high seas in 1966) but also reduces the compensation offered to tuna fishermen. The government will not pay fines levied within an area similar to that which the United States claims. In this regard the general manager of the American Tunaboat Association stated that:

the net effect will be to deny United States tuna vessels access to tuna grounds for searching and catching purposes. The loss resulting to the fleet will not be mortal, but it will be severe in that the fleets ability to compete with foreign competition will be seriously affected.¹⁹⁵

2. Studies in ocean space law. Although closely related to co-ordination, this involves specific studies in that area of the law which governs relationships arising out of, or relating to, the use of ocean space.¹⁹⁶ Within this broad framework a continuous activity of the program would be to determine and clarify the present and expected scope and field of ocean space law, such as;

¹⁹⁵Statement of August Filando (Hearings M.F.L.), pp. 312-319.

¹⁹⁶From unpublished papers and remarks given the writer by Professor William L. Griffin as well as excerpts from an experimental mimeographed edition of "Text, Treaties, Cases, and Other Materials on the Law of the Ocean Space," which Professor Griffin is using in an experimental course at Temple University School of Law.

Surveys of the present state of the law, adopted or established on the local, national, and international levels by legislation, treaties, court decisions, and commercial practices.

Surveys to identify the manner in which the expansion and development of new commercial uses of ocean space is, or is likely to be, influenced by the present legal position; with special emphasis on identification of the inhibitions to such commercial uses which may be rooted in the present legal position and could be removed by a change in, or clarification of, the present legal position.

Studies of where and how to draw the lines of reconciliation among competing uses of ocean space, especially the reconciliation of new uses of the sea and sea bed with existing uses and employment of new techniques without undue derangement of other interests.

Review and evaluation of proposals for changes in, or for new, laws and treaties which have been advanced by individuals or organizations, both governmental and non-governmental.

3. Educational activities. As has been seen, many different fields of specialization are combined in ocean exploitation activity. Everyone who is, or will become involved, regardless of his particular area of interest will find that his professional participation will be enhanced by knowledge of the expanding legal framework and its rational adaptation to new facts and situations brought about by

technological and commercial advances and achievements in ocean space. Therefore, the "program in ocean resource law" should undertake and promote a variety of educational programs.

4. Public activities. The proposed program would disseminate through publication wherever possible and desirable texts, symposia, lectures and results of studies it undertakes or promotes. Such publication is needed and of great value today.

This admittedly energetic program of co-operation, study, education, publication and dissemination is necessary to properly implement the provision of P.L. 454. In so doing the United States will establish the "program for progress" which can build a sound domestic basis for international legal development to meet the challenge of the ocean and its resources.

Conclusion

Only one conclusion can be drawn from a serious study of the various aspects of oceanology. The seas of the world have potentials which stagger even the most skeptical imagination. Equally significant is the fact that man is actively engaged in perfecting the means with which to realize that potential. Within the nature of this exploitive process, however, lies the seeds of conflict, dispute, and possible destruction of those resources now so abundant and so necessary for the future. The law and those responsible for its development must awaken to the technical and scientific

reality of current achievements and adapt the law of nations to adequately regulate ocean exploitation for the benefit of all mankind. This is no easy task, for the world political situation raises considerable barriers to the orderly determination of what is the common good and what is in the common interest. We can not wait complacently for these obstacles to disappear, nor can we ignore them and proceed blindly in the international sphere for the harm done may be great and the damage permanent. The answer lies in the effective, vigorous, domestic legal program for the development of international and national law worked out in conjunction with the scientific, technological, political, and industrial disciplines so vitally concerned with peaceful progress in resource exploitation.

BIBLIOGRAPHY

BIBLIOGRAPHICAL ENTRIES

A. BOOKS

Alexander, Lewis M. Offshore Geography of Northwestern Europe-Political and Economic Problems of Delimitation and Control. Chicago: Rand McNally, 1963.

Amador, F.Y. Garcia. Addendum to the Exploitation and Conservation of the Resources of the Sea. Leyden: A.W. Sythoff, 1963.

_____. The Exploitation and Conservation of the Resources of the Sea. Leyden: A.W. Sythoff, 1959.

Anninos, P.C.L. The Continental Shelf and Public International Law. 1953.

Arnold-Forester, William. The New Freedom of the Seas. London: Methuen and Company, Ltd. 1942.

Auguste, Barry. The Continental Shelf: The Practice and Policy of Latin American States with Special Reference to Chili, Ecuador, and Peru.

Briggs, Herbert W. ed. The Law of Nations, (2nd ed.) New York: Appleton-Century-Crofts, Inc., 1952.

Brittin, Burdick H. International Law for Seagoing Officers. Annapolis: U.S. Naval Institute, 1956.

Columbus, John C. International Law of the Sea. (1st and 3rd eds.) London: Longmans, 1943 and 1954-55.

_____. International Law of the Sea. (5th ed.) London: Longmans, 1962.

Christy, Francis T. Jr. and Scott, Anthony. The Common Wealth in Ocean Fisheries. Baltimore: Johns Hopkins Press, 1966.

Daly, Reginald A. The Floor of the Ocean. Chapel Hill: The University of North Carolina Press, 1942.

Grotius, Hugo. The Freedom of the Seas. New York: Oxford University Press, 1916.

Lauterpacht, H. Oppenheim's International Law. Vol. II, (7th ed.) London: Longmans, Green and Company, 1952.

- Masterson, William E. Jurisdiction in Marginal Seas. New York: MacMillan Company, 1929.
- McDougal, Myers S. and Burke, William T. Public Order of the Oceans, New Haven: Yale University Press, 1960.
- O'Connell, D.D. International Law. Vol. II, London: Stevens and Sons, Ltd. 1965, pp. 661-728.
- Oda Shigeru. International Control of Sea Resources. Leyden: A.W. Sythoff, 1963.
- Reiff, Henry. The United States and the Treaty Law of the Sea. Minneapolis: University of Minnesota Press, 1959.
- Russell, E.S. The Overfishing Problem. The Lamar Lectures, Cambridge: Cambridge University Press, 1942.
- The Law of the Sea. London: Society of Comparative Legislation and International Law, 1958.
- Von Glahn, Gerhard. Law Among Nations. New York: The MacMillan Company, 1965.
- Webster's New International Dictionary. (2nd ed.), unabridged, G. & C. Marriam Company, 1966.
- Zaslaneskie, Emil K. Oil under the High Seas. Carbondale: Southern Illinois University Press, 1961.

B. PUBLICATIONS OF THE GOVERNMENT,
LEARNED SOCIETIES, AND OTHER ORGANIZATIONS

- Alban, Weber. "Our Newest Frontier: The Sea Bottom, Some Legal Aspects of the Continental Shelf Status." Transactions MTS Conference, Washington, D.C.: Marine Technology Society, p. 405.
- Bennett, E.F. "Legal Climate for Undersea Mining," Transactions MTS Conference, p. 204.
- Ely, Northcutt. "The Laws Governing Exploitation of the Minerals Beneath the Sea." Transactions MTS Conference, p. 373.
- Gaber, D.H. and Reynolds, D.F. "Ocean Engineering and Oceanography from the Businessman's Viewpoint." Transactions MTS and American Society of Oceanographic Joint Conference, Vol. I, June 14-17, 1965, p. 130.

Griffin, William L. "Development of Law for Ocean Activities." Transactions MTS Conference, p. 356.

Hackworth, G.H. Digest of International Law. Vol. II, Washington, D.C.: U.S. Government Printing Office, 1941.

League of Nations Treaty Series, Vol. CCV, No. 4829, pp. 121-27.

McKelvey, E.V. and Chase, Livingston. "Selecting Areas Favorable for Subsoil Prospecting." Transactions MTS Conference, p. 44.

Montgomery, N.E. "Drilling in the Sea from Floating Platforms." Transactions MTS Conference, pp. 230-1.

Oswald, James W. "Toward a Political Theory of the Ocean." Transactions MTS Conference, pp. 358-72.

"Report of the Scientific Results of the Voyage of 'H.M.S. Challenger,'" Vol. V, London: 1891, pp. 1-525.

Second United Nations Conference on the Law of the Sea, Official Records, "Summary Records of Plenary Meetings and of Meetings of the Committee of the Whole." Geneva: 17 March - 26 April, 1960.

United Nations Conference on the Law of the Sea. Official Records, Vol. II. Plenary Meetings, Geneva: 24 February - 27 April, 1958.

United Nations Conference on the Law of the Sea. Official Records, Vol. III, 1st Committee, (Territorial Sea and Contiguous Zone), Geneva: 24 February - 27 April, 1958.

United Nations Conference on the Law of the Sea. Official Records, Vol. IV, 2nd Committee (High Seas: General Regime), Geneva: 24 February - 27 April, 1958.

United Nations Conference on the Law of the Sea. Official Records, Vol. V, 3rd Committee (High Seas: Fishing: Conservation of Living Resources), Geneva: 24 February - 27 April, 1958.

United Nations Conference on the Law of the Sea. Official Records, Vol. VI, 4th Committee (Continental Shelf), Geneva: 24 February - 27 April, 1958.

United Nations Legislative Series. "Laws and Regulations on the Regulations of the Regime of the High Seas." New York: United Nations Legal Department, 1951.

United Nations Scientific Conference on the Conservation and Utilization of Resources - Lake Success (New York), 19 August - 6 September, 1949, Vol.VII, E/Conf. 7/7, New York, 1950.

U.S. Congress, H.R., Committee on Merchant Marine and Fisheries, Hearing Before Subcommittee, 89th Cong., 1st Sess. August 3-19, 1965, Washington, D.C.: U.S. Government Printing Office.

U.S. Congress, H.R., Report No. 1548, "Marine Resources and Engineering Development Act of 1966." Section 2, 89th Cong., 2nd Session. Washington, D.C.: U.S. Government Printing Office.

U.S. Congress, H.R., Subcommittee on Fisheries and Wildlife Conservation, Hearings Before Subcommittee, 89th Cong. 2nd Sess., 3 May - 1 June, Washington: U.S. Government Printing Office.

U.S. Congress, H.R., Subcommittee on Oceanography, (Hearings N.O.P.L.) pp. 259, 411, 519.

Wellington, C.G. and Cruckshank, M.J. "Review of Available Hardware Needed for Undersea Mining." Transactions MTS Conference, 1966, p. 108.

White House Conference on International Co-operation. "National Citizens Commission Report of the Committee on Natural Resources, Conservation and Development and on Science and Technology," Documents 8 and 22 (Final Draft), 28 November - 1 December, 1965.

C. PERIODICALS

Bader, Richard. "The International Indian Ocean Exploitation." 1967 Oceanography Yearbook. p. 56.

Behrendt, Ernest. "Hedden Empire: The Continental Shelf." Petroleum Today, 6:25-9, 1964.

Briggs, Herbert W. "Jurisdiction over the Sea Bed and Subsoil beyond Territorial Waters," American Journal of International Law, 45:338-42, 1951.

British Yearbook of International Law. (1923-4) and XXVII (1950), pp. 34 and 385.

Chapman, W.R. "U.S. Policy on High Seas Fisheries." Department of State Bulletin, XX (May, 1949).

- Chapman, W.R. Yearbook of Fisheries Statistics, 1964, p. 102.
- Clark and Renner, "How the U.S. Can Acquire a Billion Square Mile Empire." Saturday Evening Post, (April 4, 1946).
- "Continental Shelf: North Sea Rush Gathers Force." Petroleum Press Service. 31:164-7, (May, 1964).
- Coplin, William D. "Satisfied and Dissatisfied States Negotiate International Law." World Politics, (February, 1965).
- Craven, John P. "Sea Power and the Sea Bed." U.S. Naval Institute Proceedings. 92:36-53, (April, 1966).
- Cromie, William J. "Who Will Own the Oceans Wealth - A Struggle for Ownership of Ocean is Arising." U.S. Naval Institute Proceedings. 91:52-61, (January, 1965).
- Emery, K.O. "Maritime Sediments." reprinted from Maritime Sediments, II (April, 1966).
- _____. "Some Potential Mineral Resources of the Atlantic Continental Margin." U.S. Geological Survey Professional Paper. 525C, pp. C159 - C160.
- Friedman, Robert L. "Negotiating International Law." World Politics. XVIII (October, 1965).
- Geo Marine Technology. II (May and June, 1966).
- Gaber, D.H. and Reynolds, D.F. "Economic Opportunities in the Ocean." Technical Review of Battelle Memorial Institute. 14:12 (December, 1965), p. 8.
- Goddard, G. "The Land Under the Sea." Indian Yearbook of International Affairs, VI, 1957, pp. 81-103.
- Green, L.C. "The Continental Shelf." Current Legal Problems. 1951, pp. 54-80.
- Gutteridge, J.A.C. "The 1958 Convention on the Continental Shelf." British Yearbook of International Law. XXXV, 1958, pp. 251-73.
- _____. "The Regime of the Continental Shelf" Grotius Transactions, XCIV, 1958, pp. 77-89.
- Harrington, William C. "U.S. Policy toward High Seas Fishing." Department of State Bulletin. (April 26, 1954).
- Hurst, Cecil. "Continental Shelf." Grotius Transactions, XXIV, 1949, pp. 153-69.

- Lauterpacht, H. "Sovereignty over Submarine Areas." British Yearbook of International Law. 27:376-433, 1950.
- Lill, Gorden G. "Mohole Project." Oceanography Yearbook, 1967, p. 62.
- Mezerik, A.G. "Natural Resources - Restrictions, Regulations, Agreements." International Review Service. X, No. 80, 1964.
- Murray, G.E. "Salt Structures of Gulf of Mexico Basin." Bulletin American Association of Petroleum Geologists. L, pp. 439-478.
- Navy Magazine of Sea Power, IX (May, 1965).
- Ocean Science News, VIII (June 24, 1966).
- Oceanology. I (June 29, 1966).
- Padelfod. "Financing Peacekeeping Politics and Crises." International Organizations, IXX, 1965, pp. 444-45.
- "Recent Developments Effecting the Regime of the High Seas." Department of State Bulletin, XXXII (June 6, 1955).
- Schwarzenberger, G. "The Frontier of International Law." Year Book of World Affairs. 6:246, 1952.
- "Sea Lab I." reprinted from Naval Research Reviews. (July, 1964).
- "Sea Lab II: A Summary Report," reprinted from Naval Research Reviews. (November, 1965).
- "Sovereignty of the Sea." U.S. Department of State Geographical Bulletin. No. 3, (April, 1965), p. 9.
- "Text of the American Proclamation of the Continental Shelf." Department of State Bulletin. (September 30, 1945).
- Under Sea Technology. VII (January, May, and June, 1966).
- "United Kingdom v. Norway (Norwegian Fisheries Case) 46;" American Journal of International Law. 195:2, pp. 348-370.
- "U.S. Policy on Fisheries and Territorial Waters." Department of State Bulletin, XXX (June, 1952).
- Wakelin, James H. Jr. "Alvin's World," reprinted from Naval Research Reviews.

Weeks, L.G. "World Offshore Petroleum Resources." Bulletin American Association of Petroleum Geologists. Vol. XCIX, (1965), pp. 1680-1693.

Young, "The Legal Status of Submarine Areas beneath the High Seas." American Journal of International Law. 45:225-39, 1951.

Young, Richard. "Sedentary Fisheries and the Conservation on the Continental Shelf." American Journal of International Law. CV (1961), p. 359.

D. PAMPHLETS

Briggs, Robert O. and Hatchett, George L. Techniques for Improving Underwater Visibility with Video Equipment. reprint form Ocean Science and Ocean Engineering, II, 1965.

Deep Quest. Sunnyvale, California: Lockheed Missiles and Space Company.

Diving Submersible Deepstar - 2000. Baltimore: Westinghouse Underseas Division.

Farrell, J.F. and Lampe, H.C. The New England Fishing Industry: Functional Markets for Finned Food Fish. I, Department of Food and Resource Economics, Bulletin No. 379.

Finn, D.G. Fish: The Great Potential Food Supply. Rome: Food and Agricultural Organization of the United Nations, 1960.

Oceanography. "Interagency Committee on Oceanography of the Federal Council for Science and Technology, ICO Pamphlet No. 10 (June, 1963).

Pike, Skinner T. and Spilhaus, Atheistan. Marine Resources. Publication 1000-E, Washington: National Academy of Sciences - National Research Council.

Potential Resources of the Ocean. Van Camp Sea Food Company, (January, 1965), p. 17.

"Some Examples of Work and Progress in Fisheries." World Food Problems. Pamphlet No. 3, Chapter III, Rome: Food and Agricultural Organization of the United Nations.

Task Analysis of Offshore Oil Development. Anaheim, California: North American Aviation, Inc. Deep Submergence Systems.

The Territorial Sea. London: Great Britain Central Office of Information, 1961.

The Grumman PX-15. Bathpage, New York: Grumman Aircraft Engineering Corporation.

Thermoelectric Development Capability. St Paul: Minnesota Mining and Manufacturing Company.

E. UNPUBLISHED MATERIALS

Burke, William T. "Ocean Sciences, Technology, and the Future of International Law of the Sea." Proceeding of 1966 Law of the Sea Institute scheduled for publication in 1967.

Dean, Arthur S. "Effects of U.S. Commitments on Ocean Exploitation." Second General Session of MTS Conference, June, 1966.

Hewett, D.F. "Stratified Deposits of the Oxides and Carbonates of Manganese" (Paper soon to be published in Economic Geology).

Kinkel, A.R. "Massive Pyritic Deposits Related to Volcanism and Possible Methods of Emplacement." (Paper soon to be published in Economic Geology).

Lambertsen, C.J. "Physiololgical Barriers and Breakthroughs in Undersea Activity." (Paper presented at MTS Conference, June 28, 1966).

Tubman, William C. "The Legal Status of Minerals Located on or Beneath the Ocean Floor Beyond the Continental Shelf." (Paper presented at MTS Conference, June, 1966).

F. MAPS

"The Indian Ocean, the Geology of Its Bordering Lands and the Configuration of Its Floors." U.S. Geological Survey Map. I-380, 1963.

"World Bottom Contour Chart." H0-W/000 Series. Washington, D.C.: U.S. Navy Hydrographic Office.

G. EVENTS

Second Annual Marine Technology Society Conference and Exhibit, June 27-29, 1966. Sheraton-Park Hotel, Washington, D.C.

APPENDIX

APPENDIX A

LETTER FROM ASSISTANT SECRETARY FOR
CONGRESSIONAL RELATIONS

Department of State
Washington, May 3, 1965

Hon. Herbert C. Bonner
Chairman, Committee on Merchant Marine and Fisheries,
House of Representatives.

Dear Mr. Chairman: Your letter of February 23, 1965, previously acknowledged, requested the views of the Department of State on H.R. 5175, a bill providing for a study of the legal problems of management, use, and control of the natural resources of the oceans and ocean beds.

While the Department is unaware of the need for any such legal study from the standpoint of international law or of our relations with foreign countries it sees no objection thereto if such a study is considered necessary from a domestic law standpoint. In such eventuality some agency of the Government having responsibilities in the field of our natural resources, such as the Department of the Interior, might be more appropriate for this function than the U.S. Coast Guard.

The Bureau of the Budget advises that from the standpoint of the administration's program there is no objection to the submission of this report.

Sincerely yours,

Douglas MacArthur II

Assistant Secretary for Congressional Relations

(For the Secretary of
State)

APPENDIX B

MEMORANDUM FROM ASSOCIATE SOLICITER

DIVISION OF PUBLIC LANDS

UNITED STATES
DEPARTMENT OF THE INTERIOR
Office of the Solicitor
Washington 25, D.C.

May 5, 1941

Memorandum

TO: Director, Bureau of Land Management

FROM: Associate Solicitor, Division of Public Lands

SUBJECT: Application of Outer Continental Shelf Lands Act to
designated area off the coast of California

This is in reply to your memorandum of April 13, 1961, inquiring whether phosphate deposits in a designated area off the coast of southern California may be leased under the Outer Continental Shelf Lands Act (67 Stat. 462; 43 U.S.C. secs. 1331-1343).

The designated area lies some forty miles off the coast of southern California. While it lies closer to the mainland than San Clemente Island, the designated area does not lie between that island and the mainland but rather in the open sea. The soundings in the designated area range between 43 and 670 fathoms, the greater part of the area being at a depth of far more than 100 fathoms. Between the designated area and the mainland lies a deep channel in which the soundings are of 600 fathoms and more.

The question of the propriety of leasing phosphate deposits in this area under the Outer Continental Shelf Lands Act has been presented to us because it has been frequently said in the past that the continental shelf extends seaward to a point where the water deepens rapidly and that this outer limit is set at the 100-fathom line. Under such a definition the designated area would lie beyond the outer

Continental Shelf, and, consequently, the crux of this problem is whether there is in fact a seaward limit to the applicability of the Outer Continental Shelf Lands Act set at the 100-fathom line. The distance of 40 miles from the mainland is of little importance since in the Gulf of Mexico activities under the Act are conducted at a greater distance; there, however, the depth of the water increases very slowly.

The question presented is rather novel. Previous questions as to the applicability of the Outer Continental Shelf Lands Act have concerned the landward limits of the outer Continental Shelf and the disputes between the States and the Federal Government as to boundaries. The question here is not similar because there is no other party to assert jurisdiction over the seabed and subsoil of this area if the United States should fail to do so.

The definition of the "Outer Continental Shelf" in section 2(a) of the Act (43 U.S.C., sec. 1331(a)) is silent as to how far in a seaward direction the continental shelf extends. The definition merely states:

"(a) The term 'outer Continental Shelf' means all submerged lands lying seaward and outside of the area of lands beneath navigable waters as defined in section 2 of the Submerged Lands Act (Public Law 31, Eighty-third Congress, first session), and of which the subsoil and seabed appertain to the United States and are subject to its jurisdiction and control."

It should be noted that section 2(a) defines the shelf in terms of the subsoil and seabed under the jurisdiction and control of the United States, while section 3(a) (43 U.S.C. sec. 1332(a)) declares that the subsoil and seabed of the "outer Continental Shelf appertain to the United States and are subject to its jurisdiction, control and power of disposition***." Thus the term "outer Continental Shelf" appears to be used in the Act not as a geographic term generally understood by geographers but as having been given a special statutory definition in order that it may apply to all submerged lands over which the United States has asserted jurisdiction and control seaward of the boundaries of the States.

While the statute is silent as to the seaward limits of the continental shelf, the legislative history is vague. It, unlike the statute, does contain a description of the continental shelf as it is regarded by geographers. However, as we have pointed out above, the statute does not employ the term as it is ordinarily used by geographers, but employs it rather as describing all the submerged lands seaward of the States' boundaries over which the United States asserts jurisdiction and control. Consequently, any

description in the legislative history of the continental shelf as a geographic concept may be regarded as an effort to give the Congress a general idea of the area over which the United States was asserting jurisdiction rather than a precise definition applicable to the statute. The Senate Interior Committee report on S. 1901, 83rd Congress, states (S. Rep. No. 411, 83rd Congress, 1st Sess., page 4):

"The Continental Shelf is defined as the extension of the land mass of the continents out under the waters of the ocean to the point where the continental slope leading to the true ocean bottom begins. This point is generally regarded as a depth of approximately 100 fathoms, or 600 feet, more or less. In countries using the metric system, the outer limit of the shelf is generally regarded as a depth of 200 meters, which is approximately the same as the 100 fathoms mark adopted by England and America.

"In his testimony in 1949 before the Senate Interior and Insular Affairs Committee, the former Secretary of the Interior gave the following description of the Continental Shelf:

'These lands begin at the low-water mark along the open sea, or at the seaward boundary of inland waters - such as bays, ports, and the mouths of rivers - and extend seaward for varying distances at different places.

'The Continental Shelves are slightly submerged portions of the continents that surround all the continental areas of the earth. Along some portions of the coasts they are very broad, gently sloping platforms; and at other places they are narrow. The outer boundary of each shelf is marked by an increase in the gradient of slope of the sea floor. This occurs generally at a depth of approximately 100 fathoms, or 600 feet. Beyond the 100 fathom line, the outer slopes of the Continental Shelves are inclined more steeply toward the ocean deeps.

'Along the Atlantic coast and in the Gulf of Mexico the Continental Shelves are generally very broad. Off the New England coast, where the width is greatest, the shelf extends seaward about 250 miles. Elsewhere along the Atlantic coast it ranges in width from about 40 to about 100 miles except for a relatively narrow strip along the east coast of Florida. In the Gulf of Mexico the average width of the broad shelf off the west coast of Florida is about 150 miles, and elsewhere in the Gulf the shelf is from 40 to 150 miles wide except where the land area

formed by the Delta of the Mississippi River has been extended across the shelf almost to its outer edge.

'Off the Pacific Coast States the Continental Shelf is relatively narrow, ranging in width from 5 miles or less to a maximum of about 40 miles!'

Why the 100-fathom line was generally accepted as the seaward limit is not explained in the report except as set forth in the former Secretary's testimony.

The first action by the United States Government with respect to the continental shelf was the issuance by President Truman of a Proclamation (No. 2667) on September 28, 1945 (59 Stat. 884). That proclamation declared that the United States regarded the natural resources of the subsoil and seabed of the continental shelf beneath the seas but contiguous to the coasts of the United States as appertaining to the United States, subject to its jurisdiction and control. As justification for the proclamation, it was stated that "with modern technological progress" the utilization of those natural resources "is already practicable or will become so at an early date." Nowhere in the proclamation is there any mention of the seaward limits of the continental shelf. The press release which accompanied the proclamation (printed at page 53 of the Senate report) did state:

"Generally, submerged land which is contiguous to the continent and which is covered by no more than 100 fathoms (600 feet) of water is considered as the continental shelf."

However, the last paragraph of the press release (at page 54) emphasized the importance of technology in determining the seaward limits of exploitation as follows:

"The advance of technology prior to the present war had already made possible the exploitation of a limited amount of minerals from submerged lands within the 3-mile limit. The rapid development of technical knowledge and equipment occasioned by the war, now makes possible the determination of the resources of the submerged lands outside of the 3-mile limit. With the need for the discovery of additional resources of petroleum and other minerals it became advisable for the United States to make possible orderly development of these resources. The proclamation of the President is designed to serve this purpose."

It is thus clear that at the time when the Outer Continental

Shelf Lands Act was passed the Congress did not contemplate the immediate development of areas beyond the 100-fathom line. The reason that such development was not contemplated was apparently the existing technological inability to develop resources at such great depths. Nevertheless, the Congress did not prescribe a limit on the depth of water beneath which the subsoil and seabed appertain to the United States and may be developed under the act. Without such a seaward limit it is possible to hold that with technological progress the act may be applied to areas at greater and greater depths.

The Senate Report also refers to the shelf as extending to a point where the gradient of the decline of the sea floor has a marked increase and where the slope to the true ocean floor begins. Language to this effect is also found in footnote 3 of United States v. Louisiana, 363 U.S. 1(1960). The determination of such a point presents difficulty and would require the careful study of experts in this field. We do not presume to be competent to determine this point. However, we note that the sea floor in this general area does not slope steadily to the true ocean floor. Instead it is cut up with channels, ridges, and plateaus. This does not, therefore, appear a satisfactory test of the seaward limit of the continental shelf. It is not required by the statute, and was abandoned in the definition of the continental shelf recently adopted by the United States.

On May 26, 1960, the Senate ratified the "Convention on the Continental Shelf" (106 Cong. Rec. 10374; daily ed. May 26, 1960). That Convention has not, we understand, yet come into effect, but it may be regarded as expressing the present views of the United States on the continental shelf. Article one of that Convention is as follows:

"For the purpose of these articles, the term 'continental shelf' is used as referring (a) to the seabed and subsoil of the submarine areas adjacent to the coast but outside the area of the territorial sea, to a depth of 200 metres or, beyond that limit, to where the depth of the superjacent waters admits of the exploitation of the natural resources of the said areas; (b) to the seabed and subsoil of similar submarine areas adjacent to the coasts of islands.

This is the first definition of "continental shelf" officially adopted by the United States which sets any seaward limit. Though it is not an amendment of the Outer Continental Shelf Lands Act, it is an indication of the extent of the area of seabed and subsoil over which the United States asserts jurisdiction, control, and power of disposition. As we have pointed out above, the Act is applicable to all submerged lands seaward of the States' boundaries of which the subsoil

and seabed appertain to the United States and are subject to its jurisdiction and control. Since the United States has now asserted rights to the seabed and subsoil as far seaward as exploitation is possible, it is clear that the Outer Continental Shelf Lands Act is now applicable to all these areas. There is no question that the area designated on the map which you have sent us falls within the scope of the definition in the Convention and is, therefore, subject to leasing under the Act.

It is difficult to see how a case or controversy concerning our interpretation of the applicability of the statute will arise under the present circumstances. If the applicant had proceeded to develop these phosphate deposits without regard to the Outer Continental Shelf Lands Act, we could have objected, and on our assertion of the applicability of the Act the question could have been settled judicially. However, here the company has applied for a lease under the Act and we are aware of no party with standing to object to the granting of such a lease.

We agree with Mr. Caplan, in his memorandum of April 13, that there appears to be no reason to regard this area as within Mexican jurisdiction.

(Sgd) Thomas J. Cavanaugh

Thomas J. Cavanaugh
Associate Solicitor
Division of Public Lands

FIGURE I

Total catch, catch per unit of effort, and total amount of gear run at different rates of fishing in a model fishery.

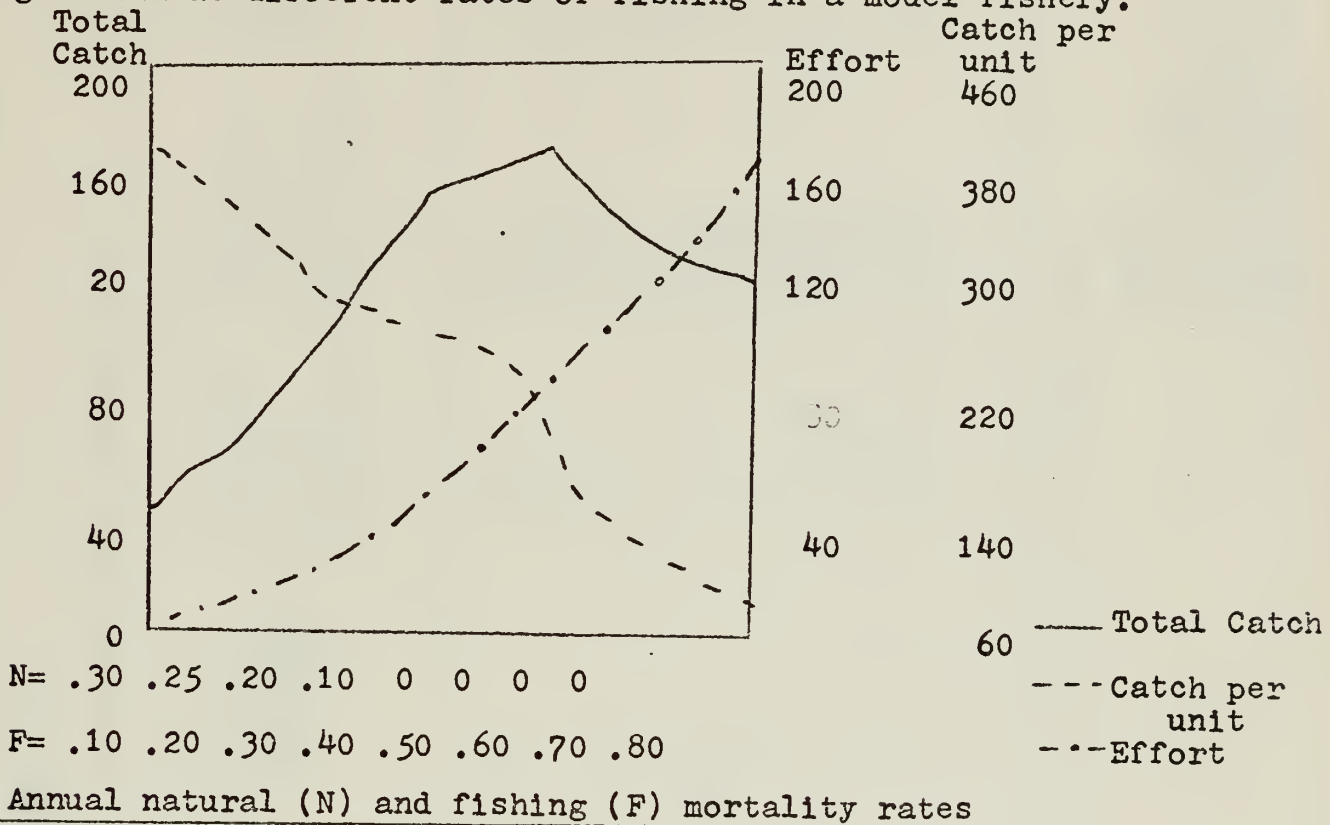


FIGURE II

Changes expected to occur in the years immediately following a sudden change in the rate of fishing from 50 to 70% per year.

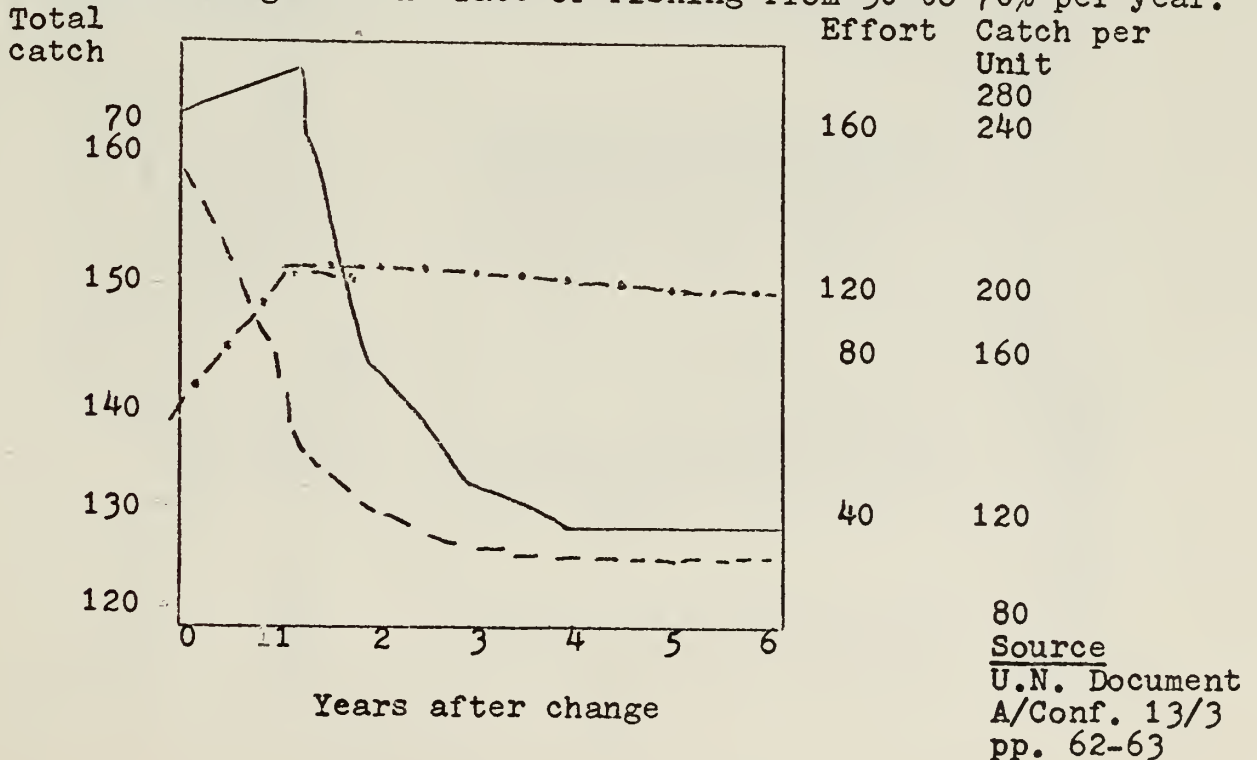


FIGURE III

Reserves of Metals in Manganese Nodules of the Pacific Ocean

Element	Amount of Element in Nodules (Billions of tons)	Reserves in Nodules at Consumption Rate of 1964 (Years)	Approximate Ratio of Reserves of Element (Reserves on Land)	Rate of U.S. Consumption of Element in 1964 (Millions of tons/year)	Rate of Accumulation of Element in Nodules (Millions of tons/year)	Ratio of Accumulation (Rate of U.S. Consumption)
Mg	25.	600,000	L*			
Al	43.	20,000	100	0.04	0.18	4.5
Ti	9.9	2,000,000	L	2.0	0.30	0.15
V	0.8	400,000	L	0.30	0.069	0.23
Mn	358.	400,000	100	0.002	0.0056	2.8
Fe	207.	2,000	500	0.8	2.5	3.0
Co	5.2	200,000	40	100.	1.4	0.01
Ni	14.7	150,000	100	0.008	0.036	4.5
Cu	7.9	6,000	40	0.11	0.102	1.0
Zn	0.7	1,000	100	1.2	0.055	0.05
Ga	0.015	150,000	-	0.9	0.0048	0.005
Zr	0.93	100,000	100	0.0001	0.0001	1.0
Mo	0.77	30,000	500	0.0013	0.0065	5.0
Ag	0.001	100	100	0.025	0.0054	0.2
Pb	1.3	1,000	40	0.006	0.00003	0.005
				1.0	0.009	0.009

* Present reserves so large as to be essentially unlimited at present rates of consumption.

Source

John L. Mero, "Review of Mineral Values on and under the Ocean Floor," Transactions MTS Conference, p. 77.

FIGURE IV

OCEAN MINING TECHNOLOGY TIME TABLE

	DEPTH OF WATER		
	50'	300'	600' 1000'
MINING USING AIR LIFT DEVICE	1960	1970	1975 1980
MOBILE MINER (OCEAN FLOOR)	1970	1972	1975 1980
BARGE DREDGE LIFT	1900	1970	- -
STATIONARY MINING PLATFORM	1960	1970	1975 1980
BOYANT SUBMERSIBLE SYSTEM	-	1975	1977 1980
UNDERWATER OPEN PIT HARDROCK MINING	1975	1985	1995 2005
UNDERWATER "AERIAL" PHOTOGRAPHIC RECONNAISSANCE	1960	1964	1970 1975
EXPLORATION SUBMARINE (CORER)	-	1968	1968 1968
UNDERWATER SITE DEVELOPMENT STATION	1970	1972	1975 1980
SOLUTION MINING (SULFUR, POTASH)	1961	1980	1985 2000
HARDROCK MINING (BELOW SHELF)	1900	1985	2000 2000
MINING SHAFT	1970	1980	2000 2000

Source:
International Mineral and
Chemical Corporation, Skokie,
Illinois

FIGURE V

PROJECTED BEAVER CAPABILITIES

SERVICES TO 1,000 FOOT DEPTHS FOR 6 OR MORE HOURS

VISUAL SURVEYS
SONOPROBE SURVEYS
MAPPING
BEARING STRENGTH MEASUREMENTS
PHOTOGRAPHY
TV MONITORING

OPERATE MANIPULATORS AND MANY
EXISTING TOOLS
SITE SELECTION
ESTABLISH BOTTOM BENCH MARK(S)
CLEAR DEBRIS
OBSERVE DRILL PLATFORM ANCHOR
SET
OBSERVE AND DOCUMENT LANDING OF
DRILL STRING
ASSIST IN ORIENTING DRILL
STRING
CORRECT ALINEMENT OF GUIDE
LINES
REPLACE BROKEN GUIDE LINES
OBSERVE CEMENT OVERFLOW AND
ASSIST IN CORRECTION

OPERATE COUPLINGS
RIG CHAFING GEAR
REPLACE HYDRAULIC LINES
CHECK CASING HANGER LOCKS AND SEALS
OVERRIDE RELEASE OF BLOWOUT PREVENTER
INSPECT AND CLEAN SEAL SURFACES
PRIOR TO COUPLING
OBSERVE COUPLING ACTION
REPLACE BLOWOUT PREVENTER RAMS
RELEASE BUOYS OR LOWERING LINES FROM
PRODUCTION LINES AFTER IMPLANT

COVER PRODUCTION LINES IN CRITICAL
AREAS; ASSURE SUPPORT IN OTHERS

ALINE PIPELINE CONNECTORS
CONNECT PIPE SECTIONS
TEST RE-ENTRY TRANSDUCER
BUOY
RELOCATE WELLS
REPLACE PIPE SECTIONS
RIG HOISTING EQUIPMENT FOR
SURFACE CRAFT
INSPECT WELLHEAD HARDWARE
AND PRODUCTION LINES
MONITOR WELL PRODUCTION
SECURE WELLS OR FLOW LINES
INSERT PIGS
REPLACE DEFECTIVE HARDWARE
ASSIST IN EMERGENCIES
RECOVER OR ASSIST IN RE-
COVERY OF OBJECTS
DROPPED FROM DRILL PLAT-
FORM
REMOVE MARINE GROWTH

Source:
Task Analysis of Offshore Oil
Development. North American
Aviation Inc.

thesM2518

International law and exploitation of th



3 2768 001 88260 8

DUDLEY KNOX LIBRARY